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Consumer perceptions of environmentally and climatically significant food consumption

A focus group study in the Finnish context

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Abstract of master's thesis

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Abstract

Food consumption is one of the areas which have the biggest impact on the environment; a little less than 30 percent of greenhouse gas emissions and around 50 percent of eutrophication of all household consumption accounts for food in Finland. The importance of the sustainable decision-making of the consumers is especially highlighted in the food sector, where in contrast to other sectors, significant greenhouse gas emission reductions cannot be achieved just by applying low-carbon-technology; significant reductions can be achieved only by changing the dominant consumptions patterns and the food-related behaviour of the consumers.

Previous studies show that the consumers communicate positive attitudes toward sustainable decision making and they seem to have a true concern about the global sustainability issues. Still, they are struggling to translate the attitudes into consumption behaviour. Thus, there seem to be a clear and widely acknowledged attitude-behaviour gap.

This study aims to explain the barriers to environmentally significant behaviour by building understanding on consumer perceptions of environmentally and climatically significant food consumption by studying consumer perceptions of five focus groups. A theoretical framework of the pro-environmental consumer behaviours and the environmentally significant food consumption was created, which was later on reflected to the findings of the focus groups. Additionally, the future direction for climate communication of food was identified.

Based on the empirical results, it can be concluded that the current level of knowledge of the consumers related to environmental and climatic considerations of food is very poor. The consumers seem to have both false assumptions and knowledge of the environmental impacts and the sources of food. Furthermore, the consumers seem not to consider climate change as one of the most important environmental issues and the concept is carbon footprint was very poorly known. The information asymmetry was recognized to be the most significant single barrier to closing the attitude-behaviour gap. It seems that there is an urgent need for a wide education scheme to correct the great information asymmetry.

Keywords Attitude-behaviour gap, environmentally significant food consumption, carbon labels

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30 November 2012
In Espoo, Finland

Taneli Joonatan Roininen

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1 INTRODUCTION

1.1 Background

Food consumption is one of the areas which has the biggest impact on the environment. According to a report of Danish Environmental Protection Agency (2002), within the EU-25, approximately one third of household total environmental impact is related to food and drink consumption. Similar results have been found by Seppälä et al. (2009), who concluded that around one third of household environmental impacts are caused by food in Finland. A little less than 30 percent of greenhouse gas emissions and around 50 percent of eutrophication of all household consumption is caused by food in Finland (Seppälä et al., 2009).

When comparing climate change impacts of food to the other areas of household consumption, only housing has greater impact than food (Seppälä et al., 2009). However, when looking the other environmental impacts other than climate change, food has clearly the most significant environmental impact compared to any other household activity or behaviour (Seppälä et al., 2009).

The importance of sustainable decision-making of the consumers' is especially highlighted in the food sector, where in contrast to other sectors, significant greenhouse gas emission reductions cannot be achieved just by applying low-carbon-technology; significant reductions can be achieved only by changing dominant consumption patterns and food-related behaviour of the consumers.

The defining challenge facing humanity in the twenty-first century is to learn how to live sustainably; we must learn to 'meet our needs of the present without compromising the ability of future generations to meet their own needs' (United Nations' Brundtland Report, 1987). There is a large number of initiatives around the world to change the world for better in terms of environmental and social standards. Some initiatives originate from corporate decision makers, some are triggered by public organizations via political decision-making, and some are pushed forward by various NGO's, for instance. What seems to be the future

direction of catalysing responsible behaviour of our economy, however, is the increased awareness of environmental sustainability issues and raising pro-environmental attitudes of the consumers.

Various studies indicate that values and attitudes of the consumers are increasingly supporting socially and environmentally significant consumption. However, there seems to be a clear and widely acknowledged attitude-behaviour gap (the concept firstly presented by Boulstridge and Carrigan, 2000). The consumers indicate positive attitudes toward sustainability and they seem to have a true concern about the global sustainability issues, but they are struggling to translate this into their actual consumption behaviour. As a result of this inconsistency, the current consumer behaviours have had little environmental significance (Kollmuss & Agyeman, 2002; Bonini & Oppenheim, 2008; Young et al., 2010).

Over the last 30 years many psychologists and sociologists have explored the roots of environmental actions and have aimed to understand why people act environmentally and what are the barriers to pro-environmental behaviour (Kollmus and Agyeman, 2002). Despite the efforts, no definite answer has been found (Kollmus and Agyeman, 2002).

1.2 Context of the study

In the Finnish food sector, a rapidly growing number of companies are producing environmental information of their products by life cycle assessment to communicate their environmental stance, primarily climate change impact by carbon footprints, to the consumers. Some companies seem to rationalize carbon footprint calculation efforts as a source for internal development of their production system, while others seem to be more customer-oriented and aiming to get the benefit via customer interphase.

Whatever the motivations are, currently over 30 Finnish food products are already carbon labelled by five different companies and a couple of new companies are expected to launch carbon labelling schemes of their own in the

near future too. The first carbon labels were introduced in Finland already in 2008, and year by year, the number of carbon labelled products has increased gradually.

The strong interest of the Finnish food industry towards carbon footprints is a positive matter, however, there is currently very little knowledge how the consumers perceive environmentally significant, or furthermore climatically significant food consumption. Thus, it is currently hard to evaluate the national potential of carbon footprint labelling to catalyse more climate friendly food consumption.

Climate Communication I project (2009-2011) of MTT Agrifood Research Finland started a vibrant discussion in the Finnish field of food production of the challenges and possibilities of carbon footprint communication. As an outcome of the Climate Communication I, stakeholders of Finnish food chain asked for a follow-on project around consumer research. Climate Communication II (2011-2013) was launched in 2011 to get a better understanding of consumer behaviour related to environmental sustainability and climate friendliness of food. Furthermore, the project aims to build efficient and consistent guidelines for climate communication and carbon footprint labeling of food in Finland. This study is part of the consumer studies performed in the Climate Communication II in 2012.

1.3 Research purpose and questions

A recent study of Moraes et al. (2012) presents that the attitude-behaviour gap has been studied in too strict scope and thus much research about it has resulted in very limited understanding of the phenomena. Moraes et al. (2012) questions the whole initial concept of the attitude-behaviour gap by seeing it as a somewhat natural part of the consumers interplay with many causal variables. They argue that the attitude-behaviour inconsistencies should be approached by taking into account of multiple causal variables, not just consumer rationales (Moraes et al., 2012).

In this research, I follow the notions of Moraes et al. (2012) of the current attitude-behaviour gap and approach the attitude-behaviour gap similarly as a co-product of many causal variables. Therefore, the purpose of this study is to build broad understanding of consumer perceptions of environmentally and climatically significant food consumption by studying consumer perceptions.

This study aims to answer to two research questions:

1. What are the consumer barriers to adopting environmentally significant food consumption?
2. What are the desirable guidelines for future climate communication of food?

1.4 Methods in brief

As the purpose of this study is to get broad understanding of consumer perceptions of environmentally and climatically significant food consumption and broad understanding of the phenomenon is needed, qualitative methods of study are applied. Qualitative approach has significant benefits, such as the researcher getting inner experience of research participants, getting deeper understanding how meanings are formed, and discover rather than test variables (Corbin and Strauss, 2008). The research is done in grounded theory basis (Corbin and Strauss, 2008), however, within the limitations of research settings.

There are many different types of qualitative data collections techniques, but the method of semi-structure focus groups was chosen to allow partial freedom in conversations, but simultaneously enabling going through many themes of interest and collecting a vast set of data rather quickly. Five semi-structured 2-hour focus groups were performed in February 2012 by Taloustutkimus Oy in Helsinki Finland. The focus group consisted of 5-8 pre-selected, self-claimed pro-environmental participants, aged from 24 to 65.

The pro-environmental participants were selected according to their pro-environmental claims about their food shopping by pre-focus group phone

interviews. In the pre-focus group interviews, the pro-environmental attitudes were tested by asking two questions about their purchase behaviour, according to which a specific group of consumers were chosen to take part in the study. Four groups consisted of fairly pro-environmental consumers and one group consisted of highly pro-environmental consumers.

The initial focus group questions were based on conclusions of a stakeholder workshop of Climate Communication II project in the late 2011, where the project participants communicated their needs of information relating to environmentally significant consumer behaviour and carbon footprint communication. The final focus group questions were co-operatively designed with Taloustutkimus Oy.

All the five focus groups were structured with four themes, which were:

1) Choosing groceries
2) Environmental responsibility and food
3) What is a product carbon footprint?
4) Carbon footprint communication

The focus group discussions were initially tape recorded and lettered, as well as videoed, to enable building a high quality ground data for analyses. Additionally, the focus groups were observed through a mirror glass and field notes were made. The data was coded and analysed with the aid of ATLAS TI – application.

The findings from the focus groups are compared to the current literature to test their relevance and understand the relationships to earlier research in the field. It should be noted that the literature review presented in this paper, was done only after the data analyses, as suggested by grounded theory approach (Corbin and Strauss, 2008) even though the findings are presented the other way round.

1.5 Structure of the thesis

This thesis is divided into eight main chapters. After introduction, chapter 2 presents the theoretical framework of the study, followed by presentation of the methodology used and the findings from the focus groups in chapter 4. Further, discussion in the chapter 5 combines the findings of the focus groups to the literature and, according to reflections, answers to the research questions, followed by final conclusions in chapter 6. In the last two part of the thesis I will present the managerial implication of the results and discuss the study limitations and make recommendations for further study.

2 THEORETICAL FRAMEWORK

The purpose of this chapter is to present a framework for environmentally sustainable consumption by presenting the most relevant literature and theories.

Firstly the concept of sustainability and sustainable development is discussed and defined followed by presenting the complexity of consumer behaviour and richness of the field of consumer studies. Thirdly, a framework for pro-environmental consumer behaviour is suggested including a behavioural model of environmentally significant behaviour as well as a definition of environmentally significant food consumption. Lastly, the current knowledge of consumer perceptions and behaviours is overviewed.

2.1 Sustainability and sustainable development

Even though the terms of 'sustainability' as well as 'sustainable development' are actively in use, it seems that there is some confusion what these terms really mean and what the concepts stand for. Thus, this sections overviews the initial definitions of the concepts and discusses the terminological challenges.

2.1.1 Defining the concept

The concept of sustainable consumption draws its content from the sustainable development, which is commonly defined as a 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (United Nations' Brundtland Report, 1987). Brundtland Report (1987) furthermore contains two key concepts, which are (1) the concept of needs, which refers in particular to the essential needs of the world's poor, and (2) the idea that our current state of technology and social organization might limit the environment's ability to meet our current and future needs. The Brundtland Report (1987) defines 13 initial components and component-specific goals of sustainable development that define the broad content of the concept.

Later on, however, the United Nations World Summit Outcome (2005) has divided sustainable development into three main areas: economic development, social development and environmental protection. These components are recognized to be interdependent as well as mutually reinforcing when aiming towards sustainable development. Sustainable development includes a wide range of activities from policy principles to production and consumption of goods and services (Brundtland Report, 1987).

Sustainable consumption could be generally thought as a concept bringing together many key issues within sustainable development, such as 'meeting needs, enhancing the quality of life, improving resource efficiency, increasing the use of renewable energy sources, minimizing waste, taking a life cycle perspective and taking into account the equity dimension' (Oslo Roundtable, 1994). The Oslo Symposium proposed the following working definition of sustainable consumption in 1994:

> *"The use of goods and services that respond to basic needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations".*

This study focuses on sustainable consumption in the view of environmental protection, later on referred as environmental sustainability.

2.1.2 Terminological challenges

The concept of sustainable development has been criticized due to its broad focus and objectives, and a study of Lele (1991) shows that even though the formulation of Brundtland Report (1987) has political strength, there is great inconsistency and significant weaknesses in how the concept is applied and understood in the mainstream use. He argues that the concept generally lacks intellectual clarity and rigor (Lele, 1991).

The broadness of the definition of sustainable development seems to have had a great impact on the terminology of sustainability-related consumer behaviour terminology as well. One can find a great number of literature, for example, by using one of the following terms:

- Sustainable consumption
- Ethical consumption
- Responsible consumption
- Green consumption
- Green purchasing behaviour
- Pro-environmental behaviour
- Ecologically conscious consumer behaviour
- Environmental consumption
- Environmentally conscious consumption
- Environmentally sustainable consumption
- Environmentally friendly consumption
- Environmentally significant consumer behaviour.

Not just defined and conceptualized in numerous ways, the concept of sustainable consumption is problematic also by its definition. A Cardiff University Annual Review of Green Consumption (Peattie, 2010), for instance, discusses the general problemacy of the 'green consumption'; 'green implies the conservation of environmental resources, while consumption generally involves their destruction.' In addition to this oxymoron, the theories of being green, or furthermore, the practice of consuming in a green manner, are complex. Sustainability or greenness should be taken more like comparative rather than absolute definitions as it can be hard to say if something is really sustainable or green, or not.

Aiming to overcome the issues related to the terminology of the field, in this study, I aim to use the terminology of Stern (1997; 1999; 2005) whenever possible and convenient. Instead of using the concept of 'environmentally sustainable consumption' I aim to use the term 'environmentally significant

behaviour' (ESB), which refers clearly to the environmental impact of particular behaviour and avoids the apparent oxymoron. Furthermore, a concept of 'environmentalism' will be defined, which refers to environmental intent of a consumer, to highlight the fact that in some cases environmental intents can have very little to do with environmental significance. The term 'climatically significant' refers to environmentally significant behaviour which has positive significance to climate. Before explaining further these concepts and the work of Stern in more detail, however, I present shortly the field of the consumer behaviour and the complexity of it.

2.2 Consumer behaviour

According to Jackson (2005), understanding the mainstream consumer behaviour creates a basis for understanding the pro-environmental consumer behaviour. However, he also recognizes the great challenge of aiming to create a good overall picture of the broad field and highlights the acceptance of complexity:

> *'To proceed without acknowledging the degree of complexity and sophistication of consumer behaviour, will lead to inevitable failure (Jackson, 2005)'.*

Therefore, this section presents the foundations of the complexity of consumer behaviour and presents some of the current behavioural models in use in the literature.

2.2.1 Complexity of explaining behaviour

Social scientists have presented (Miller, 1995) that consumption behaviour is strongly based on fundamental aspects of our social world, and can be explained to some extent by our social history. Thus, first debates relating to consumption can be traced at least back to classical philosophy.

As a field of study, consumer studies have started critical social theory of the 19th and 20th century followed by the consumer psychology and motivational

research after World War II, ‘ecological humanism’ in the 1960s and 1970s, the anthropology and social philosophy of the 1970s and 1980s, and the sociology of modernity, which have become popularized in the 1990s (Jackson, 2005).

Due to the fact that consumer behaviour seems to have many different forms and patterns, and is formed and shaped by multiple factors, researchers can look into it and aim to explain it in numerous ways (Jakcson, 2005). The motivation is, that researchers want to find out the best way to design and market products that people would buy; the critical social theorists and the humanists are alarmed at the ecological and social impacts of rampant materialism; the anthropologists and the sociologists are out to understand modernity, and reflect on the kind of society we have become (Jackson, 2005). There seem to be tremendous amount of psychological, sociological and anthropological literature on consumption, which supposedly reflects the complexity of consumer behaviour.

Despite the different of goals and motivators of different research directions, I found that many approaches and theories seem to be beneficial to building understanding of the pro-environmental behaviour. What models and theories to use and apply in one’s own research depend arguably on the research purpose and goals. Even though many models and theories can be beneficial for one’s research, using multiple models might not lead to better outcome of the research. Additionally, it is better to look into easily usable, rather simple models with well-defined variables, rather than complex overall theories. This is especially highlighted if there is empirical data involved in the research; complexity of a model could be beneficial only for heuristic purposes (Jackson, 2005).

Ajzen and Fishbein (1980) argue that ‘theories that incorporate virtually every known social-psychological construct and process, not only lack parsimony but, more important, they are likely to generate confusion rather than real understanding’.

2.2.2 Different models used in the literature

Jackson (2005) recognized 30 models and theories of consumer behaviour to be useful in explaining pro-environmental consumer behaviour. Furthermore, he divides the models roughly into two groups according to how they approach consumer behaviour. The first group of models (internalist approach) approach consumer behaviour via internal factors to the consumers like attitudes, values, habits, knowledge, feelings and personal norms. The second group of models (externalist approach) approach consumer behaviour as matter of external factors like physical and technological infrastructure, political, social and cultural factors, fiscal and regulatory incentives and social norms. In the internalist approach, the consumers can be seen as individuals who can freely choose pro-environmental behaviours, assuming that they possess appropriate beliefs or attitudes, while in the externalist approach the consumers are 'forced' to do certain consumption choices due to various external conditions (Jackson, 2005).

Some studies (Stern, 2000; Bagozzi, 2002) indicate that both external and internal approaches should be combined to an integrated model to get a better understanding of the big picture. Jackson (2005) recognized the work of Stern (2000;2005) to overcome rather well the internalist – externalist dichotomy by his Attitude-Behaviour-Context (ABC) Model, which is part of Stern's Theory of Environmentally Significant Behaviour (Stern, 2000).

Moral and normative aspects are natural part of any discussion related to environmentally significant consumer behaviour (ESB) (Jackson, 2005). Still one of the most widespread models of consumer behaviour, the rational choice model, ignores the impact of values, moral and norms on consumer behaviour by assuming that consumer behaviour reflects only aspects of self-interest (Holdsworth and Steedman, 2005). According to the rational choice theory, people weight up the expected benefits and costs of different actions, and choose the one that offers the highest expected net benefit or the lowest expected net cost (Jackson, 2005). However, this model is found to lack predictive power when aiming to predict environmentally significant behaviour, and if moral

beliefs are included, the predictive power of the model is improved according to Jackson (2005).

As this literature review was done only after data collection and data analysis, I was able to direct the review towards models and theories, which seem to best explain or possibly challenge the findings. The theory of Stern (2000 and 2005) was recognized to be particularly interesting as it resonated with the initial data analysis, as well as, clearly divides pro-environmental behaviour into environmentally significant behaviour and behaviour with environmental intent, but no environmental significance. The theory of environmentally significant behaviour is presented in the following section.

2.3 Pro-environmental consumer behaviour

Stern has been one of the most successful scholars at building an integrated model of consumer behaviour, especially focusing on environmentally significant consumer behaviour (ESB) (Jackson, 2005). He has built a multi-dimensional view which incorporates both internalist and externalist elements and thus takes into account

- motivations, attitudes and values
- contextual or situational factors, including social influences
- personal capabilities
- habits,

but still keeping the model relatively simple and usable. In this chapter, we firstly define ESB, secondly discuss the different types of ESB, thirdly define environmentalism and lastly present causes of ESB.

2.3.1 Definitions

ESB has been traditionally defined by its impact and it has been evaluated by ‘the extent to which it changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystem of the biosphere

itself (Stern, 2000)'. Furthermore, behaviours have been divided into direct impacts and indirect impacts. Direct impacts, like cutting down forests or emitting greenhouse gases, have a direct impact on environment, whereas international development policies or commodity prices can have an indirect effect on the change in the natural environment (Stern, 2000). This definition depicts ESB by a by-product of modern human behaviour. Stern (2000) points out, however, that only recently a new meaning to the ESB has arisen: environmental protection has become an important consideration in consumer decision making.

In the view of understanding environmental protection as decision making criteria potentially leading to ESB, it is better to define it from the consumer's view as a behaviour that is undertaken with the intention to protect the environment or to change it for better (Stern, 2000). Stern argues the intent-oriented definition to be better than the impact-oriented definition for two reasons. Firstly, it defines environmental intent as an independent factor having an impact on behaviour, and secondly, it highlights the possibility that environmental intent may fail to result in environmental impact. Stern (2000) considers research questions related to the determinants and nature of people's beliefs of ESB especially interesting.

To make any research in this topic useful, both definitions should be understood and applied (Stern, 2000), as they seem to have different purposes in explaining ESB.

2.3.2 Types of behaviours

According to Stern (2000) pro-environmental behaviour was long seen as a one unitary class of behaviour. However, studies from the past twenty years show that there are certain types of behaviour to be recognized within the ESB. Also a report of Swim et al. (2010) notes that some researchers tend to study ESB as a single class of behaviour whereas some researchers consider different types of ESB separately. Stern sees, though, the dividing of ESB into multiple behaviours to be beneficial, as different attitudinal and contextual factors combined with

personal capabilities can turn into different types of ESBs. He divides ESB in his recent presentation (2010) into environmental activism (and oppositionism), support for (or opposition to) environmental movement and sustainability goal policies, household consumer behaviour and organizational behaviour.

- *Environmental activism (and oppositionism).* E.g. active involvement in environmental organizations and demonstrations. It is good to note that also behaviours regarded as environmental oppositionism, active involvement in movements denying environmental issues are included in this category.

- *Support for (or opposition to) environmental movement and sustainability goal policies.* These indirect behaviours include non-activist behaviour like environmental citizenships, supporting and accepting public policies and regulations, as well as joining a environmental movement 'silently', in a non-activist way. Like in environmental activism, these public-sphere behaviours can include oppositionistic behaviours as well.

- *Organizational behaviour*. People can have both direct and indirect effect on the environment by acting certain ways in the organizations where they belong. For example, an engineer may design less environmentally harmful products or factory machinery can be better maintained to be more environmentally efficient, bankers can demand environmental investment criteria or any employee can demand environmental aspects to be taken into consideration in the company policies.

- *Household consumer behaviour.* Most of the consumer research focusses on private sphere behaviours such as the purchase, use and disposal of personal and household products that have environmental impact. Household consumer behaviours have direct impact on environment.

This study focusses on household consumer behaviour, especially purchase behaviours related to food.

2.3.3 Environmentalism

According to Stern (2000, p 411) environmentalism can be defined as 'the propensity to take actions with pro-environmental intent.' There seem to be many different approaches explaining environmentalism; at least the following seem relevant (cited in Stern, 2000):

- Adaptation of New Environmental Paradigm (Dunlap, 2000; for example)
- Egalitarian cultural bias (Dake, 1991; Douglas & Wildavsky)
- Affective influences of environmental concern, including sympathy for others (Allen & Ferrand, 1991)
- Emotional affinity toward nature (Kals et al., 1999)
- Emphathy with wild animals (Schultz, 2000)
- Altruism (Heberlein, 1972)

A Report of Swim et al. (2010) concludes that psychological factors, especially values, can remarkably effect remarkably consumption in certain conditions and that psychological constructs are relevant for understanding ESB and environmentalism. Psychologists define usually value as a 'guiding principle in the life of a person' (Schwatz, 1992, p.17). Values can be seen as criteria to select and justify actions, as well as evaluate people or events (Schwartz, 1992).

Several studies indicate (Karp, 1996; Stern, Dietz, Kalof, &Guagnano, 1995; Stern et al., 1999; cited in Stern, 2000) that the values activating pro-environmental personal norms are altruistic or self-transcendent values. Similarly, it has been found (Stern, 1999) out that people who identify with self-enhancing or egoistic values, such as materialism or personal ambition, are less likely to have environmental intentions.

Stern (2000) discussed in his paper also the potential importance of biospheric values, particularly as a foundation for environmentalism leading to people's support for preserving endangered species and habitats, but he did not find any empirical support for this hypothesis at the time of study. Later on, after Stern's publication, it has been empirically shown that 'environmental identity', defined as a sense of connection to non-human environment, has relevance in predicting environmentalism and ESB (Schultz, 2001; Clayton, 2003). The environmental identity is based on a person's perception of social identity relating to the natural non-human environment. If one perceives to belong to the in-group of the natural non-human environment then it is assumed to increase environmentalism, and if to the out-group, vice versa (Clayton, 2003).

Stern et al. (1999) found the altruistic, value-based patterns of behaviour, first presented by Heberlein (1972), especially interesting. Heberlein (1972) assumes that due to the fact that environmental well-being is for the public good, altruistic motives and norms are necessary for an individual to contribute to environmental protection. Furthermore, altruistic (including pro-environmental) behaviour occurs as a response to personal moral norms, which are activated when an individual becomes aware of adverse consequences (AC) of one's behaviour and when one feels able to reduce that treat (AR).

Stern and his colleagues developed (1999) a value-belief-norm (VBN) theory of environmentalism which builds on the assumptions of Hederlein (1972) and the Schwartsz's (1973, 1977) moral norm-activation theory of altruism. Stern et al. (1999) argues the VBN theory to have good explanatory power predicting and explaining non-activist environmentalism compared to many models in hand, which is also partly supported by Jackson (2005). The VBN theory, like the whole theory of ESB, is an integrated theory bringing together various models of the consumer behaviour. The VBN theory links value theory, norm-activation theory, the New Environmental Paradigm (NEP), Awareness of adverse consequences (AC) and Perceived ability to reduce threat (AR, but also known as Perceived Consumer Effectiveness, PCE, in the consumer behaviour literature). The VBN theory of environmentalism is presented in the Figure 1.

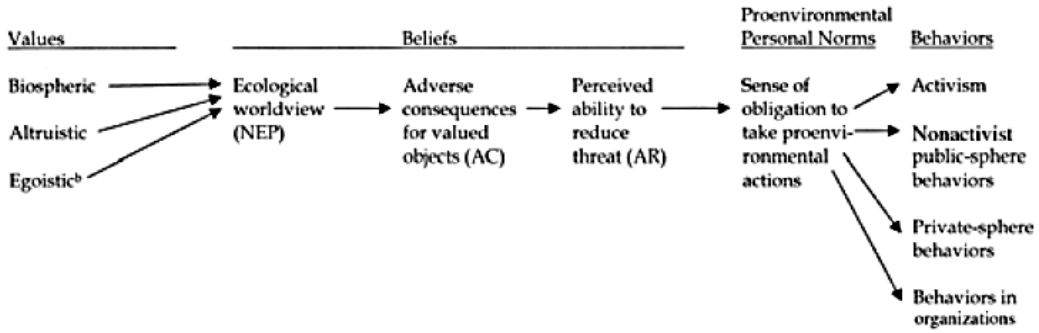


Figure 1, a presentation of chain of variables leading potentially to ESB (Stern, 1999). Values form the basis for beliefs related to NEP, AC and AR, which shape the formation of pro-environmental personal norms. Particular norms underpinned by particular values and beliefs turn into specific type of behaviours.
[b]Measures of egoistic values have been negatively correlated with environmentalism

The VPN theory is based on causal connections between value theory, personal beliefs and norm-activation theory. Each variable in the chain directly has an impact on the next variable, but is able to effect the previous down the chain as well (Stern, 2000). According to Stern (2000) personal norms to take pro-environmental action are activated by personal values combined with beliefs that environmental conditions threaten things the individual values (AC) and that the individual can act to reduce the threat (AR). In other worlds, the theory proposes that adverse consequences (AC) to objects which individual values activate certain types of personal norms. For example, as altruists care about the well-being of other people, they are concerned about the environmental conditions which endanger the well-being of others and if they feel able to reduce that threat, they potentially act with environmental intent, if allowed by contextual factors.

As environmentalism is strongly linked to beliefs, environmentalist personal norms can be influenced by information and education, which potentially change personal beliefs (Stern, 2000). Therefore consumer education can be seen as one potential way to generate environmentalism. Understanding the basis of environmentalism is, however, just one step towards understanding ESB better. To be able to explain, predict or change ESB contextual factors should be taken into account as well. The causes of environmentally significant behaviour (ESB) and the ABC Theory of Stern (2000) are presented in the following sub-section.

2.3.4 Causes of behaviours

Understanding environmentalism and how it is constructed, might not help one to understand ESB as well, however. Environmental intentions and environmental impact via ESB can be totally different matters due to various reasons (Stern, 2000). Firstly, environmentalist intent is only one factor effecting the consumer's behaviour and its importance as an impact factor varies from one consumer to another. Additionally, it is important to note that one can behave in an environmentally significant way without any environmentalist intent at all; many ESBs are actually driven by personal habit or routine, or simply results of income or infrastructure. Furthermore, some people may behave with strong environmentalist intent, but the behaviour can have little or no environmental significance at all. Guagnano, Stern and Dietz (1995) have constructed an integrated attitude-behaviour-context (ABC) model, which Jackson recognized to be the most capable model of predicting ESB so far.

Attitude-Behaviour-Context (ABC) Theory

According to ABC Theory (Guagnano et al., 1995), behaviour (B) is formed by personal attitudinal variables (A) and contextual factors (C). The idea can be presented as follows:

$$A + C = B.$$

Therefore, the model assumes, the attitudinal factors are able to predict and explain behaviour the best when contextual factors are neutral or zero. For instance, personal behaviours that are required or rewarded by someone, difficult, time-consuming or expensive, are less likely to reflect one's attitudes (Stern, 2000).

4 Causal variables of Environmentally Significant Behaviour

Stern (2000) presents that there are four types of causal variables which are relevant in depicting ESB: The first two, attitudinal factors and contextual forces, are familiar from ABC theory above, but the other two, personal

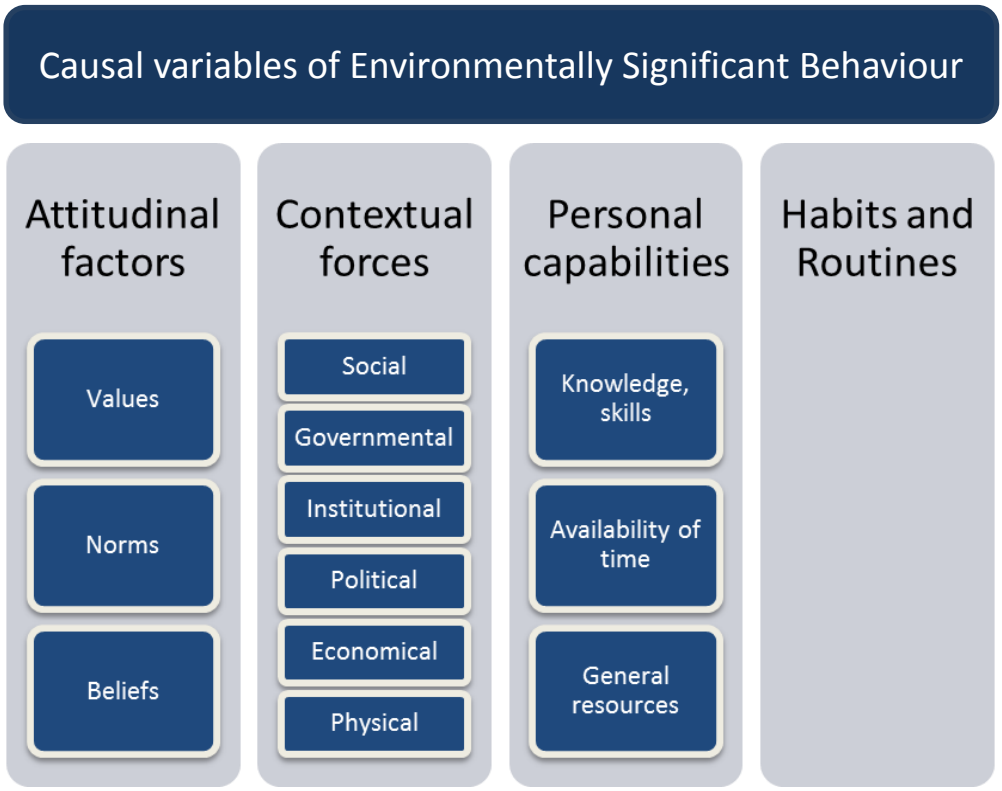
capabilities and habit or routines, should be considered as well to understand ESB.

- *Attitudinal factors.* The VBN theory provides a good theoretical account for understanding how attitudinal factors such as norms, beliefs and values turn into many different types of behaviours with environmentalist intent (Stern, 2000). There are also other attitudinal factors impacting ESB, but those are capable of impacting only certain types of ESB, however. These attitudinal factors include behaviour-specific predispositions and behaviour-specific beliefs (Stern, 2000). Additionally, ESB can also be effected by non-environmental attitudes, as noted earlier.

- *Contextual forces.* Behaviour is also shaped by contextual forces, as presented in the ABC theory. Furthermore, Stern (2000) argues, that different contextual factors can have very different meanings to different individuals with different personal attitudes and beliefs. Contextual forces include, for instance, the following factors (Stern, 2000):
    - Interpersonal influences
    - Community expectations
    - Advertising
    - Government regulations and other institutional factors
    - Monetary intensives and costs
    - The physical difficulty of specific actions
    - Built environment
    - Availability of public policies to support behaviour
    - General political and economic variables.

- *Personal capabilities.* Personal capabilities is the third type of variable of ESB. Personal capabilities include (Stern, 2000); knowledge and skills required for particular actions, availability of time and general resources such as literacy, money, social status and power.

– *Habits and routines.* The fourth causal variable is habits and routines, which somewhat differs from the other three causal variables of ESB (Stern, 2000). Habits and routines are important due to the fact that behavioural change towards ESB demands breaking of old habits as well as routinizing ESBs (Dahlstrand & Biel, 1997). According to Stern (2000), habit is a key factor in environmentally significant behaviour.



Picture 2, the four causal variables of Environmentally Significant Behaviour (Stern, 2000)

The model of four causal variables, presented in the picture 2, indicates that focussing only on attitudinal factors and environmentalism as only sources of environmentally significant behaviour is not desirable. Non-attitudinal variables need to be included in the model as only they define if any ESB behaviour will occur and in what form. Additionally the causal variables of contextual forces and personal capabilities can rather simply explain why some behaviours are more likely to occur than others. For instance, expensive behaviours such as reinsulating homes are likely to be influenced by monetary factors and difficult

behaviours such as reducing automobile use in the suburbs are likely to be strongly effected by public policy (Stern, 2000). Even though these causalities are rather obvious, their elaboration is vital and should not be forgotten when talking about ESB.

Another property of the four causal variables of ESB is that the variables are somewhat interconnected and integrated (Stern, 2000). Therefore, for instance, a new context can have a significant impact on old habits or even make an individual to reconsider his or her attitudes or values and chain them (Dahlstrand & Biel, 1997). All the four variables should be simultaneously studied and the interconnectedness of variables and their impact on ESB should be researched context-, individual- and behaviour-specifically, to make a sound description of environmentally significant behaviour.

2.4 Sustainable food consumption

Even though this study focuses on the environmental aspect of sustainability of food, it should be noted that there are also other sustainability issues related to food. Additionally, many food-related sustainability issues are interconnected, and thus, understanding the overall global impacts of food production and consumption is important in the view of environment as well.

In this chapter, I firstly present the food related sustainability issues, secondly discuss the importance of food and its consumption to global environmental sustainability, thirdly discuss the sources of environmental impacts of food products, and lastly, define the environmentally significant food consumption.

2.4.1 Global issues

In addition to major environmental impacts of food, there are many other food related sustainability issues as well. Escalating rates of obesity, food scares and diet-related diseases are increasing in the West, while at the same time, over 800 million people are hungry or starving due to poverty and lack of access to food and drinking water (Coff et al., 2008). Additionally, there are great social and

ethical issues in our current food system, for instance, related to food security, food safety and production practices and conditions in the food chain (Coff et al., 2008). As the current global population growth will continue in the future, sustainability issues related to food are predicted to become even more serious (Reich et al., 2011).

It is arguable to focus on the environmental aspect of sustainability of food in this research due to the fact, that when the capability of the environment to support our food system diminishes, it is likely have a strong negative impact on the other sustainability issues as well (Reich et al., 2011). Food consumption is the major driver in global warming, and thus, climate change impact has been widely prioritised as the most important environmental impact due to its global scale, and potential negative impact on both global economy and human well-being (Stern, 2006).

According to Stern Review (Stern, 2006) warming of 2C from pre-industrial levels could leave 15-40 percent of all species facing extinction, warming of 3-4C will result in many millions of people being flooded and by 2050, 200 million people may be permanently displaced due to rising sea levels, heavier floods and drought. Without urgent climate change mitigation the temperatures could rise by 5C, which 'would take humans to unknown territory' (Stern Review, 2006, p.6).

According to a report of the Board on Atmospheric Sciences on Climate (2011), we are already at the temperature rise of 0.8C. Additionally, a recent report of National Snow & Ice Data Center (2012) shows that the arctic sea ice cover diminished remarkably quicker than the current models have forecasted, which is argued to be a signal of unexpectedly quickly developing climate change. In the following, the environmental impacts of production and consumption of food are presented.

2.4.2 Relative importance

Food consumption is one of the areas which has the biggest impact on the environment; according to a report of Danish Environmental Protection Agency (2002), within the EU-25, approximately one third of household's total environmental impact is related to food and drink consumption. Similar results have been found by Seppälä et al. (2009), who concluded that around one third of household's environmental impacts are caused by food. in Finland. A little less than 30 percent of green-house-gas emissions and around 50 percent of eutrophication of all household consumption is caused by food in Finland (Seppälä et al, 2009).

In addition to significant climate change impact and high importance for eutrophication, food production and consumption also

- Accounts for up to 90% of western countries water consumption (Schaffnit-Chatterjee, 2009)
- is highly responsible of increasing amount of land use changes mostly due to increased demand of meat (Tempelman, 2004)
- has caused nearly 2 billion hectares of soil to degrade, which amounts to 22% of all cropland, pasture, forest and woodland (Schaffnit-Chatterjee, 2009)
- has the highest negative impact on the loss of biodiversity of any activity (SRU, 2004; cited in Reich et al., 2011).

When comparing climate change impacts of food to the other areas of household consumption, only housing has greater impact than food, followed by transportation as the third biggest environmental stress factor (Seppälä et al., 2009). However, when looking the other environmental impacts other than climate change, food has clearly the most significant environmental impact compared to any other household activity or behaviour (Seppälä et al., 2009).

It is not enough, however, to just acknowledge the importance of food as environmental loader. Only understanding the sources of different impacts can

help in defining and understanding environmentally significant food consumption.

2.4.3 The sources of environmental impacts

A study of the EU Environmental Impacts of Products (Tukker et al., 2005) evaluated the environmental impacts of twelve areas of consumption. It assessed that the consumption of food, drink and tobacco products accounts for 20-30 percent of most environmental impacts, with an exception of accounting for 59 percent of eutrophication. Within this are of consumption, meat and meat products have the greatest with estimated contributions in the range of 4-12 percent of climate change impact and 14-23 percent for eutrophication of all products. Dairy products seemed to have the next highest impact with estimated impacts of 2-4 percent of climate change impact and 10-13 percent to eutrophication. Other product sectors was recognized to have significantly lower levels of impact (Tukker et al., 2005).

Foster et al. (2006) reviewed publicly available evidence relating to the environmental impacts of a range of food products of a common shopping trolley. They specifically focussed on evidences produced by technique of Life Cycle Assessment (LCA) or closely relating approaches. They focussed on LCA-based evidences to include all the phases of a product's life cycle from 'cradle-to-grave', as well as, get an overview of all the environmental impacts of product life cycle (Foster et al., 2006). However, Foster et al. (2006) found out that most of the published LCA reports of food focus only on energy consumption, climate change impact and/or eutrophication impacts. Only a few studies took other environmental impacts into account, which was seen as a weakness of the study.

They found many studies to be hard to use and compare though. Some studies focussed on just some phases of product life cycle and background data and the methodology used was often badly reported. Furthermore, they recognised that country–specific factors can have a great significance on the results of LCA

(Foster et al., 2006). However, despite these difficulties, they were able to draw some conclusions regarding environmental impact of food products.

Transportation

Foster et al., (2006) concluded from the studies found, that food locality is not a good indicator of lower environmental impact; environmental significance of transportation is generally low. Similar findings have been made in Finland. It has been assessed (Seppälä et al., 2009; Virtanen et al., 2011) that the role of transportation is not important at all in the Finnish food chain; contribution of food transportation to climate change impact seems to be just less than 5 percent. Saarinen et al. (2011) furthermore discussed that if buying vegetables from when they are in season, the overall environmental impact can be clearly smaller, whatever the distance of food travelled, compared to buying off-season local or domestic vegetables.

When considering consumer transportation of food, Foster et al. (2006) found that transportation could be an important matter when considering how and where the consumer collects their food. They (Foster et al., 2006) presented that the environmental significance of the consumer's trip to the store is likely to have much higher impact on the environment than all of the transportation of the food bought. However, Katajajuuri (2009) has found that the transportation has overall environmental significance only when a few products are bought at one time. He found that when the consumer buys the average number of food products, around 12, the transportation to and back to store accounts for only a few percent of the total environmental impact of the food bought. Additionally, he pointed (Katajajuuri, 2009) out that sometimes shopping trips are combined with other travelling like commuting, which is likely to decrease the number even further.

Packaging and food waste

Foster et al. (2006) found evidence that the environmental impact of packaging can be high for some products, especially bottled drinks. They concluded that

the higher proportion the weight of the product is packaging the higher the overall environmental impacts of packaging. Additionally, it was argued (Foster et al., 2006) that the overall environmental impact of packaging is more defined by the local practices regarding the packaging waste, the type of packaging and the impact of packaging to food waste.

In contrast to the conclusions of Foster et al. (2006), Silvenius et al. (2010) found out that food packaging, including the environmental impact of disposal, accounts for generally less than 5 percent of all the environmental impacts of a food product and has even smaller significance in the view of climate change impact. Additionally, it was found out (Silvenius et al., 2010) that the environmental impact of the food waste in the consumer phase was greater than the environmental impact of the production and disposal of food packaging. Thus, they argued that the environmental significance of product packaging is based on the capability of the packaging to protect the product and minimize the consumer food waste. Similarly, the type of package material was found to be significant only in the view of minimising the consumer food waste by protecting the food better or impacting the consumer behaviour causing food waste (Silvenius et al., 2010).

Thus, food waste can be considered a decent indicator of environmental impact of food, due to the fact that the proportion of food wasted increases directly with all the environmental impacts of the food product (Silvenius et al., 2010). Additionally, minimising the food waste is argued to be an effective and rather easy way to lower the overall environmental impacts of food products (Silvenius et al., 2010).

Food preservation in the production chain

Refrigeration and freezing the food in the food chain seemed to increase the use of energy according to the LCA studies evaluated (Foster et al., 2006). In contrast, preserved food does not need low temperature storing at all. However, such a simple comparison between the types of storing food might not indicate environmental significance due to the fact that a suitable type of food storing can

have a significant impact on food waste during the product life cycle. Therefore, the importance of food storing for overall environmental impact is hard to evaluate by the type of storage used in the production chain (Foster et al., 2006).

Level of processing and home food preservation

Foster et al. (2006) found out in their review of LCA studies, that there are very few studies of medium- or highly –processed food publicly available. Thus, they were not able to draw any general conclusions whether it has significance on environmental impact or not. However, the matter has been studied by Saarinen et al. (2011) in a wider perspective by taking into account the whole life cycle of the food product. They (Saarinen et al., 2011) showed that processed, ready-to-eat meals have greater climate change impact in the industry phase of the life cycle, but the meals were more efficient to prepare at home, which resulted in the overall difference between home prepared meals and processed, ready-to-eat meals to be insignificant. Therefore, it can be argued that the level of processing does not seem to indicate the overall environmental sustainability of food either.

The way the food is preserved and prepared at home might have some significance on the environmental impact though, especially via impact on energy use (Foster et al., 2006). Kauppinen et al. (2010) found out that 50 percent of Finnish households direct food-related climate impact comes from food preservation and 23 percent comes from food preparation. Regarding the food preservation, they concluded that the total capacity and efficiency of cold devices can have environmental significance, especially when minimising the number of freezer appliances in the household. This is, however, the case only when there is overcapacity of freezing space but, in the view of food waste, some freezing capacity can be useful to minimise food waste. Regarding the food preparation, they concluded that in some cases food can be prepared more energy efficiently, for example by using a microwave oven (Kauppinen et al., 2010) which can have some environmental significance. Overall, Saarinen et al. (2011) concluded that more research is needed of home cooking related environmentally significant behaviours.

Organic production

According to Foster et al. (2006), for many foods, organic agriculture seems to have lower environmental impact in some impact categories than conventionally-grown food. They found that this is especially the case, if taking biodiversity and landscape aesthetics into account. However, they (Foster et al., 2006) recognised that it is rather unclear if organic production has overall smaller environmental impact than conventional production.

Furthermore, it seemed that organic agriculture has different environmental issues from different sources compared to the conventional agriculture, especially relating to eutrophication and climate change impact (Foster et al., 2006). Generally, it seemed that organic production had lower pesticide use, it generally needs less inputs, but has a greater land use, compared to conventional production. According to Foster et al. (2006, p. 142) 'it is impossible to say which is better' and they highlighted the need for further research in the area of organic production and agriculture.

Ingredient choices

Foster et al. (2006) somewhat ignored the impact of ingredient choice on the environmental impact of food in their conclusions, even though they had been found in their review of LCA studies of foods that different food types can have different environmental impacts and the environmental impact of primary production is generally very high. Seppälä et al. (2009) have evaluated that primary production accounts for generally around 60 percent of all environmental impacts of food consumption in Finland, and similar assessment has been made by Saarinen et al. (2011). They also evidenced that ingredient choices largely define the overall environmental impact of the whole meal (Saarinen et al., 2011).

Saarinen et al. (2011) studied the environmental impacts of 30 meals by life-cycle-assessment and found the difference in climate change impacts of different meals to be huge. The impact of the highest impact meal was five times the

impact of the lowest impact meal. Additionally, the eutrophication impact of meals was found (Saarinen et al., 2011) to go rather hand in hand with climate change impact, despite a few exceptions.

According to Saarinen et al. (2011), climate change impact of some meat products can be even 40-fold compared to some vegetables. Additionally, there are great differences even between the climate change impact of different meats; differences up to 15-fold are to be recognized between certain meats. Further, the impact differences in the vegetables and fruits can be similarly great, up to 5-fold, for instance between some off-season and seasonal vegetables. Low impact diet is argued (Saarinen et al., 2011) to consist of vegetable rich food, especially from seasonal production, which takes into account nutritious balance as well. Thus, ingredient choices seem to be the major determinant of the environmental sustainability of food, the most clearly in the view of climate change impact.

Saarinen et al. (2011) evaluates that climate change impact of food consumption can be decreased up to 75 percent by moving into a vegetable rich, but still nutritious, seasonal diet. Thus, the climate change impact of the whole household consumption can be decreased even up to 20 percent just by making dietary changes. As a comparison, Saarinen et al. (2011) evaluated the short term potential to decrease the climate impact of housing to be less than 20 per cent, which could decrease the total climate change impact of household consumption by less than 5 percent. Therefore, dietary changes seem to a be very efficient way to decrease personal climate change impact, and as many other environmental impacts often go hand in hand with green-house-gas emission, dietary changes are likely to decrease overall environmental impact as well.

2.4.4 Definition

White et al. (2009) recognised the difficulty of defining the elements of the environmentally significant consumption of food. They (White et al., 2009) found remarkable gaps, inconsistencies and rather poor empirical evidences in the knowledge of what actually environmentally significant food consumption is and what is not. It was concluded that there is currently no agreed set of priority

for pro-environmental food behaviours or agreements on the foods which comprise a low impact diet (White et al., 2009).

In this study, the term ‘environmentally significant food consumption’ is defined as food related environmentally significant behaviour, following the terminology of Stern presented in the chapter 2.5. Similarly, ‘environmentalist food consumption’ is defined as food consumption with environmentalist intent but no environmental significance. Based on evidence presented in the previous section, environmentally significant food consumption is defined to consist of the two following behaviours:

1) Consumption of environmentally low-impact and nutritious ingredients, forming vegetable rich, seasonal diet
2) Minimising the post-purchase food waste.

Additionally, the first behaviour should be prioritised due to the fact that it has clearly the greatest environmental significance of the two behaviours and great importance of the overall environmental impact of all individual consumption. Consumption behaviours focussing on product attributes of the distance of transportation, product packaging, type of preservation, level of processing or organicness are therefore not considered as environmental significant behaviours.

An overview of environmentally low-impact ingredients of different product categories, as well as a literature review of the impact of seasonality on the environmental impact of different vegetables and fruit are left out of this study. To get an overview of the environmental impact 50 typical vegetables, fruits, meats and basic food products, see Foster et al. (2006).

2.5 Current consumer perceptions and behaviours

So far, I have presented findings from literature of how environmentalist intents are formed, how the consumers behave according to the internal and external determinants and what is environmentally significant food consumption and what is not, according to the current knowledge. In this chapter, I overview the recent findings of how the consumers perceive environmental sustainability in relation to food, how do they seem to behave. Additionally, the current knowledge of environmental and carbon labeling is presented.

2.5.1 Food choices

Many studies during the past decade have identified that that there are three principal factors impacting the consumers' food choice: price, marketing and availability (White et al., 2009). This view has been, for example, supported by Jigsaw Research (2008) who found that the top three factors in food choice were spontaneously reported to be price, quality and special offers. Furthermore, they labeled the results into three groups; attributes with any economic aspect, attributes with any social aspect, and attributes with any possible environmental aspect. The results are presented in Figure 3.

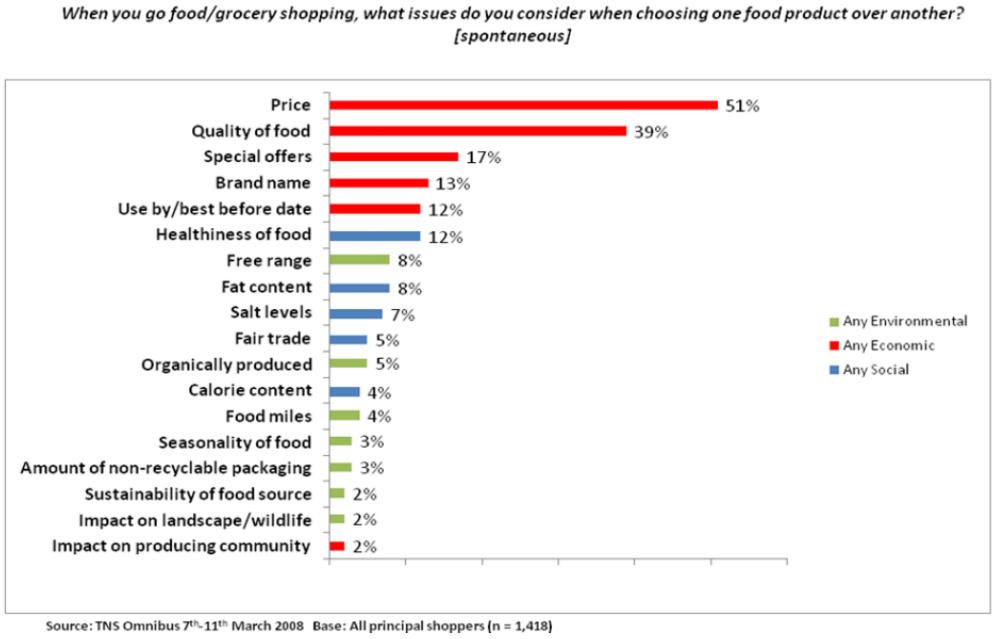


Figure 3, Issues of importance when buying food products (Jigsaw Research, 2008)

Even though, that the attribute naming in the picture 3 might not be in streamline with the environmental sustainability attributes defined in the chapter 3, it is clearly visible from the results that food choice is clearly driven by economic factors, followed somewhat by the social product attributes, including health concerns. Product attributes that have any linkage to the environment or general sustainability, seem to have significantly less importance in consumer food choice. Similarly, a report of Halliday et al. (2008) got a result that consumers rank health topics higher than the environmental considerations, while economic aspects have the highest priority.

2.5.2 Linking food to the environment

White et al. (2009) studied the current literature and noticed that there has not been much research done on whether the consumers make a link between wider environmental impacts and food at all. The few studies they found, though, indicated that only a few consumers even consider link between food and climate change, and even if the consumers are educated about the climate change and how it relates to food, people can still struggle to make a link between food and climate change (CML, 2008; cited in White et al., 2009).

Owen et al. (2007) found out similarly that linkages between food and the environment are not spontaneously made. They also concluded that the consumers with the most pro-environmental beliefs have the best understanding of the current sustainability issues, but food was not one of the most important concerns they had related to environmental sustainability.

However, Owen et al. (2007) showed that many consumers in UK were very capable of discussing the environmental impacts of food, when asking about it directly. Many participants suggested that consuming food in an environmentally sustainable manner means buying mostly domestic and seasonal food. Food with just little packaging was cited also often, alongside with wasting less food and composting all the leftovers and cur-offs. Additionally, movements such as Fairtrade and animal welfare and the distance the food has travelled were connected to environmental sustainability of food as well (Owen et al., 2007).

Furthermore, Owen et al. (2007) found that people with less pro-environmental beliefs were not able to make that many linkages between food and environment. The less environmentally conscious consumers made links mostly somewhat around packaging and food waste disposal (Owen et al., 2007). Similar findings has been made by a research by Lyndhurst (2009) who also showed that the range of linkages progressively narrows when environmental engagement of the consumer diminishes.

It seems that, the linkages between food and the environment have been weak; however, there seem to be very positive attitudes towards environmentally significant consumption in general (Young et al., 2010).

2.5.3 Attitude-behaviour gap

A global survey by Bonini et al. (2008) found that 87 percent of the consumers are concerned about the environmental and social impacts of the products they buy. However, when it comes to readiness of actually buying those products, only 33 percent of the consumers said that they have bought those products or

would be ready to buy them (Bonini & Oppenheim., 2008). Similar results have been found by Defra (2006) in the UK, where 30 percent of the consumers report that they are very concerned about environmental issues, but they struggle to translate this concern into green purchases.

Other evidence of the attitude-behaviour-gap is illustrated by Hughner et al. (2007) who showed that despite the fact that the consumers have very favourable attitudes towards organic food, 47-67 percent of the UK population, the total demand for organic foods varies from 4 to 10 percent of the total sales depending on the product category. Furthermore, it has been shown that the market share for ethical food has been constant 5 percent from 2004-2007, indicating that the gap has remained relatively still or gotten even wider.

As a result of these inconsistencies, current consumer behaviours have had little environmental significance (Kollmuss & Agyeman, 2002; Bonini & Oppenheim, 2008; Young et al., 2010). Over the last 30 years many psychologitst and sociologists have explored the roots of environmental actions and have aimed to understand why people act environmentally and what are the barriers to pro-environmental behaviour (Kollmus and Agyeman, 2002). Despite the efforts, no definite answer has been found (Kollmus and Agyeman, 2002).

A recent study of Moraes et al. (2012) presents that the attitude-behaviour gap (firstly presented by Boulstridge and Carrigan, 2000) has been studied in too strict a scope and thus many research about it has resulted in very limited understanding of the phenomena, referencing the notions of the research of Chatzidakis et al. (2004). The concept of the attitude-behaviour gap was initially criticized by Dolan (2002), who did not see the consumers as rational decision makers and instead wanted to see them more as a part of wider socio-cultural-processes. Moraes et al. (2012, p. 105) follows the same ideology by seeing the consumers ‘first and foremost as people engaged in meaningful and socially embedded everyday practices, green or otherwise, which involve the (symbolic) consumption (purchase, usage, and/or disposal) of material goods in one way or another.’ Thus, Moraes et al. (2012) questions the whole initial concept of

attitude-behaviour gap by seeing it as a somewhat natural part of the consumers interplay with many causal variables. They, therefore, they have directed their own research towards how the consumers address their attitude-behaviour inconsistencies embedded in their everyday practices, taking into account multiple causal variables and not just consumer rationales. In this research, I follow the notions of Moraes et al. (2012) and approach the attitude-behaviour gap similarly as a co-product of many causal variables.

2.5.4 Barriers to closing the cap

A paper of Bonini and Oppenheim (2008) recognized five barriers why the consumers do not consume in according to their environmentalist attitudes, especially focussing on climate impacts, and offered five simple solutions for them. The five barriers and solutions are presented in the table 1.

Table 1, five barriers to attitude -driven behaviour and suggested solutions to overcome the barriers (Bonini and Oppenheim, 2008).

BARRIER	**SOLUTION**
Lack of awareness of eco-friendly behaviours	Educate consumers
Negative perceptions of green products	Build better products
Distrust of green claims	Be honest
Higher prices	Offer more
Low availability	Bring the products to the people

Lack of awareness of eco-friendly behaviours

Bonini and Oppenheim (2008) evidenced that the consumers do know about climate change and understand that their reducing their own greenhouse gas emission will help fight the climate change and they want to join that effort. However, simultaneously, they lack the knowledge how they could lower their climate impact (Bonini and Oppenheim, 2008). It was concluded that more than one third of the participants in their survey wanted to contribute in the action against climate change but did know what to do (Bonini and Oppenheim, 2008).

The McKinsey Business in society survey (2007) showed that there is a great confusion of what behaviours are important to reduce personal climate change impact; the use of more energy-efficient appliences and recycling were ranked the highest, while eating less beef was ranked the lowest of all the behaviours in the study. Their (Bonini and Oppenheim, 2008) solution to the issue is well planned consumer eduction.

Negative Perceptions of green products

According to Bonini and Oppenheim (2008), the current 'green' products suffer the lack of quality perceptions. In 2007 GfK Roper Green Gauge Study showed that 61 percent of Americans believe the 'green' products to perform worse than conventional ones. They explain this barrier by historical reasons; environmentally friendly light bulbs like hybrid cars, for example, have performed poorly in the past. To overcome the barrier, they simply suggest building better products to the consumers.

Distrust of green claims

Bonini and Oppenheim (2008) presented that the consumers do not just doubt the quality of 'green' products, but also the claim of 'greenness'. In 2007, a study by TerraChoice Environmental Marketing Inc. (cited in Bonini and Oppenheim, 2008) evaluated over 1750 'green' product claims in US and found that only one of the claims was really true, which proves that the consumers are doubtful of environmental claims for a reason. It could be argued that the distrust of green claims can significantly impact getting over the barrier of awareness, as the mistrust is likely to have a negative impact on consumer education.

Higher prices and low availability

Bonini and Oppenheim (2008) noted that the consumers often think that 'green' products are more expensive than the conventional ones, and thus they think that

they cannot afford them. Furthermore, that pointed out that even though the consumers would like to buy 'green' products, they cannot often find them.

2.5.5 Product labelling and carbon footprints

There seem to be clear aspects in the attitude-behaviour inconsistencies, which could be at approach with information guidance. The purpose of information consumer guidance, for example via environmental labelling, is to decrease the level of asymmetric information, which potentially allows the consumers to make better acknowledged consumption decisions (Mazzocci et al., 2009). There is currently a significant amount of research around product labelling, largely related to health labelling, but increasingly related to environmental labelling as well. The evidence suggest that there are many challenges in labelling in general, as well as related to carbon footprint labelling, and thus the capability to correct asymmetric information is not clear.

General challenges

It has been found that habitual factors and a very limited amount of time can somewhat dominate routine consumer shopping (Cabinet Office, 2008). It has been estimated that the consumers spend just around three seconds in average for individual purchase decision, which means that food products are often likely to be bought with little deliberation (Cabinet Office, 2008). Furthermore, time spent for deliberation is also likely to decrease when there are more choices available (Lewis et al., 2009). Additionally, it seems that just a small number of the consumers read any packaging information at all: a study of BMRB (2009) studied the impact of front-of-pack nutritional labelling of food on consumer behaviour and noticed that only the consumers with some kind of special diet used the labels, even though a significantly higher proportion of the consumers reported that they had read the label.

To cope with over-whelmed number of choices, the consumers have been noticed to use recognition heuristics (Goldstein and Gigerenzer, 2002), which means that the consumers can choose products just because they recognize them.

Recognition heuristics can either help or prevent environmental labelling of food products; if there are many different labels with different meanings, the consumers are likely to use recognition heuristics against environmental labels, but if the labels are streamlined, it can underpin the use of environmentally labelled products.

As presented earlier in this chapter, the links between food and the environment are poorly known by the consumers despite the fact that the more environmentally conscious consumers are able to make some links between food and the environment when prompted (White et al., 2009). Generally it seems that the complexity of food system and how it impacts the environment can be simply can be too much information to cope with for some consumers (Lewis et al., 2009), at least at the current level of knowledge. Therefore, if an environmental label could guide a wider group of consumers, not just the most environmentally conscious ones, it should be really simple, quick to interpret and easily comparable (Lewis et al., 2009). Additionally, the efficiency of a labelling scheme is likely to improve if the label is implemented as a part of wider marketing and education campaign (EAC, 2009).

A study of the Cabinet Office (2008) evaluated different impacts of an omni-label and a climate label, with interesting results. They argued that even though an omni-label could make consumer decision making faster and less complex, it is actually less likely encourage change in the food culture. They recognized that a single-issue label allow the consumers to follow their own priorities, which is an important part of environmental engagement with the market (Cabinet Office, 2008).

An example of a single-issue label is a carbon footprint label, which communicates the climate change impact of the product life-cycle to the consumer. Generally, there has been just little research on how carbon footprint labels may impact on the consumer choices and how the consumers perceive the concept of carbon footprint. In the following, recent findings related to consumer perceptions towards carbon footprint are presented.

Carbon footprint labelling

Many studies done so far (Beattie and Sale, 2009; Gadel and Oglethorpe, 2011; YouGov, 2010; Eurobarometer, 2009; Gfk NOP, 2006 and Populus, 2007) have found that the consumers hold very positive attitudes towards carbon footprint labels. However, it has been evidenced that only a fraction of the consumers really know what the carbon footprint is and what it indicates: Gadel and Oglethorpe (2011) found that 72 percent of the consumers in the UK would like get carbon labels on products, but 89 percent do not know what a carbon footprint is or understand it wrongly.

White et al. (2009) concluded that carbon labels have a very low consumer appeal, despite the positive attitudes. Even though the consumers who communicated to pay premium for organic or local food were not willing to pay more for low carbon (White et al., 2007). Furthermore, recent research (Beattie and Sale, 2009) indicates that carbon labelling is more likely to impact purchasing only when put to products, which the consumer associate to be 'green'.

Research by the Upham et al. (2009) and Berry et al. (2008) explained the low appeal by, that the consumers do not perceive any personal benefit from buying carbon labels. Creese & Marks (2009) defined similarly low carbon products as a product attribute, which has no direct, tangible physical benefit to the consumer, which they argue to explain the low appeal to some extent.

3 METHODOLOGY

This chapter includes a review of the appropriateness of the research method, how the participants were selected and the final focus group questions. Additionally, a short description of data collection and analyses is presented. This chapter is divided into three sections; research method, data collection and data analyses. The purpose of this chapter is to bring transparency of the research methods and tools to enable external evaluation of the study.

3.1 Research method

As the purpose of this study is to build a broad understanding of consumer perceptions of environmentally and climatically significant consumption, using qualitative rather than quantitative research methods was a convenient methodological choice. The decision of using qualitative methods of study is also strongly supported by Corbin and Strauss (2008), who argue that the most important factor defining the research methods is the research question itself.

Qualitative approach has significant benefits, such as the researcher getting inner experience of research participants, getting deeper understanding of how meanings are formed, and discover rather than test variables (Corbin and Strauss, 2008). Additionally, qualitative methods offer more fluid, evolving and dynamic approach to understanding the phenomenon in hand, compared to more rigid and structured quantitative research methods (Corbin and Strauss, 2008). As quantitative methods might explore what decisions participants do, qualitative research methods explore the reasons behind the decision. One other virtue of the qualitative research is that it allows, or even encourages, using many alternative sources of data, which can significantly help in providing rich and detailed explanations of perceptions and behaviour (Corbin and Strauss, 2008).

There are many different types of qualitative data collections techniques, like individual interviews, focus groups, observations and action research, but the method of semi-structured focus groups was chosen to be the suitable method of

study. Focus groups as a research method can be defined as ‘a research technique that collects data through group interaction on a topic determined by the researcher. In essence, it is the researcher’s interest that provides the focus, whereas the data themselves comes from the group interaction’ (Morgan, 1997, 6).

The advantages of focus groups is that researcher can interact with the participants and pose follow-up questions, get information of non-verbal responses such as facial expressions and body language, and generally, the information is provided more quickly than in individual interviews (Stewart et al., 2006). The right amount of structure by guiding themes and questions is somewhat debatable and it largely depends of the research questions and research design. The semi-structured form in focus groups was chosen to allow partial freedom in conversations, but simultaneously enabling going through many themes of interest.

Disadvantages of focus groups are, for example, difficulty of steering and controlling the discussion, and participants feeling peer pressure to shape their answers according to the perceived group norms, resulting participants giving rather similar answers (Stewart et al., 2006). These challenges were taken into account by using a professional focus group facilitator, documenting the focus groups by video, audio and making field notes, as well as using high sensitivity in the final data analyses.

3.2 Data collection

Five semi-structured 2-hour focus groups were performed in February 2012 by Taloustutkimus Oy in Helsinki, Finland. The focus groups were moderated by a professional moderator who had 15 years of experience in moderating focus groups. The first four focus group consisted of 5-8 participants, aged from 24 to 65 with a maximum age difference of 20 years within one group. However, the fifth focus group was formed without the age limit, due to a mistake in recruitment process. In total, the total sample size was 33 participants, of which 17 were women and 16 men.

The purpose of the aimed maximum age difference of 20 years was to make the focus groups more united in terms of social status, and thus, underpin vivid and rich discussions. Additionally, grouping the participants roughly by age, enables using age as one variable explaining the data. However, the age is not seen as the one of the most interesting variable of this study, and thus, to limit the scope of this research, the impact of age on the results of the data in hand is left for later research.

Participants were selected according to their pro-environmental claims about their food shopping by pre-focus group phone interviews. The phone interviews were conducted by Taloustutkimus Oy and all the participants were selected from their own Finnish consumer panel. Participants were chosen from Capital region due to logistical reasons. Four groups consisted of fairly pro-environmental consumers and one group consisted of highly pro-environmental consumers. The pro-environmental attitudes were tested by asking two questions of their purchase behaviour. The first question asked to which extent, from 1 (indicating low importance) to 4 (indicating high importance), product attributes of

- taste
- healthiness
- price
- environmental friendliness
- domestic
- locality
- organic production

impacted their buying decisions in a grocery store. The second question asked, whether the interviewee followed news about environmental friendliness of food products or have seek information relating to it. Interviewees who rated environmental friendliness as three or four, qualified to the fairly pro-environmental groups, and interviewees who rated environmental friendliness as four and simultaneously rated domestic, locality and organic production as 3 or

4, were qualified to the group of highly pro-environmental consumers. All the participants chosen were need to report interest towards following news about environmentally friendly products or seeking information by themselves. The questionnaire used in the participant recruitment is presented in the appendix 1 and the details of the final groups are presented in the Table 2.

Table 2, the final focus groups of the research.

Group Number	Status	Women	Men	Ages
1	Fairly pro-environmental	6	1	24-29
2	Fairly pro-environmental	3	4	31-43
3	Fairly pro-environmental	2	5	53-64
4	Highly pro-environmental	2	3	28-47
5	Fairly pro-environmental	4	3	31-44

Even though, that domestic, locality and organic production might not be good indicators of environmental significance, as presented in the chapter 3, they were expected to indicate overall higher attitudes towards sustainable development, which was seen beneficial in the view of the study. Generally, to minimize the impact of the pre-focus group questionnaire to the participants, the participants were told in advance only that the study relates to buying food products and purchase attributes.

The initial focus group questions were based on conclusions of a workshop of Climate Communication II project in late 2011, where the project stakeholders communicated their needs of information relating to environmentally significant consumer behaviour and carbon footprint communication. The focus group questions were co-operatively designed with Taloustutkimus Oy. The final focus group questions are presented in the Appendix 2.

All the five focus groups were structured with four themes, which were:

5) Choosing groceries
6) Environmental responsibility and food
7) What is a product carbon footprint?
8) Carbon footprint communication

The themes were ordered and designed in the way, that previous questions did not reveal or indicate to what was coming up later on in the discussion, which enabled testing whether some environmental matters were brought up and discussed spontaneously at all. The themes 1, 2 and half of the theme 3, were designed to allow spontaneous perception and attitudes to be revealed towards environmentally and climatically significant food consumption, but in the second half of the theme 3, the consumers were given a definition of a product carbon footprint. The purpose of this intervention was to ensure that, further that moment, the participants would have same knowledge what is a carbon footprint for the benefit of the later part of the focus group discussion.

As qualitative data can be more abstract and many factors can contribute to the final research results, one of the most important factors are the quality of the materials that the researcher is analyzing (Strauss and Corbin, 2008). The focus group discussions were initially tape recorded as well as videoed, to enable building a high quality ground data for analyses. Additionally, the focus groups were observed through a mirror glass by me and my colleagues, and field notes were made. To maximise the usability and utility of the data, I littered the audio tapes word-by-word, including the participant names, by using the video available as a support material.

3.3 Data analyses

In the first phase of the analyses, the data was micro-coded with ATLAS TI – application, which allowed efficient coding and agility in using the data: a total of 384 codes were conducted, which constructed a total of 50 titles. The initial code list is presented in the appendix 3. By the use of the focus groups videos

and high quality lettering, I was able to take participant reactions and group dynamic into account when doing the initial micro-coding. Thus, I was able to evaluate the relevance, meaning and purpose of each participant expression when coding and draw deeper conclusions, that what I could not have been able to without the video. By this approach, the creditability and validity of the research findings was arguably improved significantly.

After the micro-coding phase, the analyses divided into three sections. Firstly, I built a list of consumer buying criteria recognized from the data, and studied all the individual criteria by linking consumer attitudes, beliefs, perceptions and associations to the criteria. Thus, a group of buying criteria specific maps was formed, from where the environmental considerations were picked for the use of this study. Secondly, I formed maps of negative and positive attitudes and beliefs towards diminishing personal environmental load and environmental load of food, and thirdly, I mapped the consumer beliefs and attitudes towards product carbon footprints and carbon labels. The final results of the analyses were drawn from these analyses and the findings are presented in the following chapter.

4 FINDINGS

In this chapter, findings of the final data analyses are presented. The findings are divided into eleven sections which are:

1 Environmental concerns and awareness
2 Decision making criteria for purchases
3 Assessment of personal environmental load
4 Main sources of the load
5 Environmental impacts of food
6 Relative importance
7 Impacts
8 Sources of impacts
9 Product attributes as indicators
1 0 Attitudes and perception for decreasing impacts
1 1 Carbon footprints and carbon labels

4.1 Environmental concerns and awareness

Generally, environmental concern of the participants seemed to be high and many communicated high willingness to do pro-environmental acts, but as long as the acts are easy, convenient and do not generate too much cost or loss of comforts of life. For instance, recycling, avoiding excess waste, turning off unnecessary lights and appliances were seen as normal routine behaviour by many.

– *'... I have been educated to recycle right from when I was a child.'*
(Female, 26 years, fairly pro-environmental group)

– *'That is the way it works at home; if you have a room not in use, you turn off the lights, and if there is a computer, you turn it off when you go shopping. And you basically turn off all the appliances.'*
(Male, 54 years, fairly pro-environmental group)

Furthermore, many participants communicated that their environmental consciousness has risen during the past few years. Many recognised that media and some public debates might have had big impact on their environmental consciousness, alongside with learning from others; environmental matters were not discussed in workplaces or with friends earlier, a few participants pointed out.

- '*Yeah, it has changed. Possibly because there is just so much information about it available nowadays. That's what makes the difference, doesn't it?*

  (Female, 53 years, fairly pro-environmental)

- *'Attitudes have definitely changed, we are just informed a lot more… We had back in the days the green movement, which had this buzz for environmental protection, now it is one of the priorities of every political party. Sustainable development and all that stuff… Kyoto agreements… they did not exist earlier. There was just this one rock band singing 'don't destroy the nature'. You know, it is kind of mainstream nowadays.'*

  (Male, 34 years, highly pro-environmental)

The group of highly pro-environmental consumers differed somewhat from the other four groups. They were not only more deeply, personally concerned and aware of environmental issues, but they seemed to be more active in seeking information by themselves too.

- *'I can remember when I was a child, I was watching documentaries about environmental issues and I felt angst and powerlessness, as there was nothing I could do.'*

  (Male 34 years, highly pro-environmental group)

- *'… I feel horribly guilty as a consumer in this society I'm living in.'*

  (Male, 34 years, highly pro-environmental group)

4.2 Decision making criteria for purchases

Despite the argued risen awareness of the focus group participants, the early phases of the focus groups indicated that environmental concerns have spontaneously very little room as a decision making criteria when buying food. The consumers in the fairly pro-environmental group consistently listed taste, price, domestic, quality, freshness as well as habits and routines as the most important decision making criteria. Fairly pro-environmental groups brought up some ethical concerns and health perspectives too, but the environment seemed to no have spontaneously much importance at all.

In comparison, the highly pro-environmental participants listed some ethical and environmental criteria as top decision making attributes when buying food. In addition to taste and the country of origin and locality, organicness, ethicality, authenticity and fair trade were communicated to impact their food decisions.

- *Third criteria is organic production and fair trade. Certain products are always fair trade and organic, no exceptions.*

  (Male, 34 years, highly pro-environmental group)

Generally it was evident that the group of highly pro-environmental participants considered a greater number of decision making attributes than the fairly pro-environmental participants. Furthermore, their personal awareness seemed to challenge them to consider and make trade-offs between different decision making criteria.

- *'Ethicality is an important thing in the vegetables. For instance, I don't buy Spanish tomatoes if they have been picked by slave labour. (Male, 34)*
- *But it is just not that, if you produce tomatoes in Finland it consumes quite a lot energy though. (Male, 40)*
- *In theory, Spanish tomatoes might have smaller carbon footprint, even though they are transported from Spain. But in the end of the day, I just cannot buy them. (Male, 34)'*

(Discussion from the highly pro-environmental group)

All the participants, and especially the highly pro-environmental ones, highlighted different ethical concerns in different product categories. Animal welfare issues and its associations to organic production dominated the considerations in animal based products while fair trade was considered important attribute in some imported vegetables. When there were environmental considerations, they were generally linked to a wider range of sustainability concerns, and environmental concerns alone were discussed rarely.

4.3 Assessment of personal environmental load

Nearly all the participants in the fairly pro-environmental groups felt that assessing their personal load is difficult. Many brought up that personal environmental load consists of so many areas that assessing it is just really complex, even though some information is available. Additionally, the participants reported confusion in which behaviours really make an overall difference to their impact on environment.

- *'... I mean what is the big picture? When you take it to on a practical level, it just goes so hard and complicated, and even though you had some practical advices what to do, like always turn off the lights, then, how does it effect the big picture if you compare it to taking a holiday flight?'*

  (Female, 29 years, fairly pro-environmental group)

- *'Assessing one's own (environmental) load is impossible. I just have a feeling, that I could possibly do something for it and it is just too big.'*

  (Female, 28 years, fairly pro-environmental group)

- *'I have no idea how to assess it.'*

  (Female, 44 years, fairly pro-environmental group)

In contrast to the fairly pro-environmental groups, the group of highly pro-environmental participants, as well as a few participants in fairly pro-environmental groups, felt spontaneously that assessing the environmental load is rather easy. Especially, they said the big lines are easy to evaluate, but it was pointed out that there can be a lot of small things which are hard to include in the evaluation.

- *'I mean the basic things are really easy. Simple things like lowering the room temperature;, lowering by one Celsius accounts for around five percent decrease in your energy consumption. But, then there are those things, which are harder to evaluate.'*

  (Male, 43 years, fairly pro-environmental)

- *'... you can definitely understand the big lines, even though giving a water-tight answer is difficult. If you think about the decisions you make, you can get decent results.*

  (Male, 34 years, highly pro-environmental group).

4.4 Main sources of the load

When discussing about the sources of environmental impacts, housing (including heating and energy consumption), transportation and waste from consumption were spontaneously cited as the most important factors by all the groups.

Housing – heating and energy consumption

Related to housing, it was pointed out that living in a cold country makes the proportion of the heating naturally high in the total consumption. Housing emissions were also associated with the energy consumption of lightning and appliances.

- *'Housing and heating. As we are living in Finland, there no way to avoid it. And if you include transportation, there you have the top three.'*

(Female, 25 years, fairly pro-environmental)

- *'We live in the North, we must heat our houses if we want to live here.*

  (Male, 60 years, fairly pro-environmental group)

Transportation

Transportation seemed to have a clear association with personal environmental impacts as all the participants ranked it to top three sources of environmental impacts.

- '*Transportation and commuting. I'm trying to use the other types of transportation as much as I can. Public transportation for instance. It generates less pollution.'*

  (Male, 43 years, fairly pro-environmental group)

Waste from consumption

Environmental impact of consumption was strongly linked to garbage and waste generated by daily consumption. Thus, many participants linked the recycling strongly to the environmental impacts of consumption.

- *'I was thinking consumption as well, I mean that my family consumes quite a lot.. A lot of waste comes from that and yes, we could recycle more. I don't mean though that we would not recycle at all, all the household waste is recycled, but other things could be recycled as well and not to buy everything as new.'*

  (Female, 42 years, fairly pro-environmental group)

- *'The daily consumption is what I mean. All the waste and such… Mainly from groceries.'*

  (Male, 33 years, fairly pro-environmental)

4.5 Relative importance

Just one of 33 the participants spontaneously considered the food itself to be one of the most important sources of their environmental load. Food was spontaneously considered important only by food related waste, mainly from packaging and food waste as well as transportation of food. Even the participants of the highly pro-environmental group seemed to perceive food as a minor factor in the big picture, even though they found environmental considerations of food important in general. Additionally, if a participant had considered earlier how he or she could diminish ones environmental load, food was not on the list of potential actions.

- *'I haven't even considered the carbon dioxide emissions of food. I definitely agree, that is more like hair-splitting.'*
  (Male, 60 years, fairly pro-environmental group)
- *'I doubt it (food) is a big deal…'*
  (Female, 28 years, fairly pro-environmental group)

4.6 Impacts

When asked directly whether the participants considered food as an important environmental issue, great majority of the consumers said yes, even in the group of fairly pro-environmental consumers. The difference between the two types of groups was, that the fairly pro-environmental participants somewhat struggled a lot more to explain why food is an environmental issue and what are its impacts on the environment, compared to the highly pro-environmental participants.

'What is the impact of your food choices on the environment?

- *(Long silence)'*
  (A group of fairly pro-environmental consumers)

The highly pro-environmental participants linked food to environmental issues, and furthermore, to a wider range of sustainability issues rather spontaneously

and they had slightly more ideas of what the impacts of food choices could be. However, they seemed to be more convenient in discussing the causes of impacts rather than what the impacts really are. The focus group moderator was really needed to ask further guiding questions about the impacts, in order to get any answers what the actual impacts of food choices might be. The following conversations capture the essence well:

> *'What about on the concrete level, what are the impacts of food choices on environment… and climate?*
>
> - *Less pollution to water bodies. Organic production has the safety areas. Less pollution to our climate. (Female, 47)*
> - *You need less fertilizer. (Male, 40)*
> - *Crop rotation. (Female, 47)*
> - *Fertilizers are energy intensive already in the production phase, and furthermore, they make eutrophic if you don't use them right. (Male, 40)*
>
> *You need to eat Finnish potatoes, what the benefit of it?*
>
> - *No Asian rice. (Male, 34)*
> - *It has a smaller carbon footprint. (Male, 34)*
> - *Less transportation. It comes from local field. (Female, 47)*
> - *It consumes a crazy amount of water from those people who don't have any water to drink daily at all. They need to carry it long distances or something. Rice demands a lot of water to grow, compared to what potatoes consume.' (Male, 40)*
>
> *(Discussion in the group of highly pro-environmental consumers)*

Even though some participants in the highly pro-environmental group eventually mentioned 'climate' or 'carbon footprint', it should be noted that no one spontaneously mentioned climate change or global warming.

4.7 Sources of impacts

Majority of the participants in all groups seemed to consider environmental impacts of food to come mostly from product packaging, energy consumption in the food processing and food transportation. Additionally, many participants, also in the fairly pro-environmental groups, communicated that meat has significant environmental impacts.

- *'All that plastic packaging, it makes the difference, and it annoys me.'*
  (Female, 28 years, fairly pro-environmental group)

- *'... whatever you do to any product, it consumes energy of course.'*
  (Female, 39 years, fairly pro-environmental group)

- *'... I am trying to buy local foods and not the highly processed ready-meals. You know, all things in the processing (pollute) and then the packaging etc.'*
  (Female, 42 years, fairly pro-environmental group)

- *'It makes a difference if those fat chickens are imported by aeroplane all the way from Thailand. That will emit loads to the sky for sure.*
  (Male, 62 years, fairly pro-environmental group)

When looking at how the participants perceived their overall environmental load, it seems that the consumers use the same heuristics to evaluate the environmental load of their eating as they use to evaluate their overall environmental impacts. Thus, as they perceived their overall environmental impact as various energy consumptions and wastes, they similarly perceive the food related environmental impacts via energy consumptions and waste.

4.8 Product attributes as indicators

Majority of participants, even in the fairly pro-environmental groups, had significant and rather complex associations between food and the environment

and many were able to make links between food and the environment when prompted. The difference between the two types of the participant groups was that the highly pro-environmental participants were able to draw significantly more environmental considerations related to food, compared to the groups of the fairly pro-environmental participants.

Overall it seemed that the linkages were made by using the same heuristics as when discussing the sources of environmental impacts. The linkages are divided into two groups; direct indicators of pro-environmental products, and indirect environmental associations.

4.8.1 Direct indicators

Local food

Local food was strongly linked by both of the groups to lower the environmental impacts as it was said to have short transportation needs, just little or no packaging at all, and generally the product was considered to be unprocessed.

- *'... if its locally produced, it is not polluting at all. There is no energy used that generates any carbon dioxide emission to the air.'*
  (Male, 31 years, fairly pro-environmental group)

- *'If you could buy all the meat and other basic stuff you need from the local farmers, then your footprint would go down a lot at once'*
  (Female, 44 years, fairly pro-environmental group)

The highly pro-environmental participants seemed to somewhat define local food in a bit different terms, compared to fairly pro-environmental groups. When the fairly pro-environmental participants felt that buying local food is possible only when they are off town, in rural areas, the highly pro-environmental participants seemed to find local food in wider perspective. Firstly, they used remarkably less the words 'local food' and 'local', even though they discussed about the transportation of food relatively more than the fairly pro-

environmental groups. They seemed to consider locality more as a relative concept rather than definite one. Thus, on some occasions, domestic or neighbour countries' products were considered to be rather local, which differs remarkably how the fairly pro-environmental participants discussed the local food.

Country of origin and domestic production

The products country of origin was strongly linked to transportation needs and thus to environmental impacts, like as an extension of the linkages of local food. Country of origin was, however, linked to wider set of environmental impacts than just emission from transportation by distrust to environmental sustainability of food production in certain distant countries. Many brought up that you cannot know if some foods are produced in distant countries without any external load to the environment or not.

- *'Outside Finland, when you get further South in Europe, the ethicality issues and work moral gets a lot worse. What it written on the product packaging may be far from the truth. In many views, you cannot trust them at all. Therefore I link it to food as well.'*

  (Male, 53 years, fairly pro-environmental group)

Domestic food was seen by majority of the participants as sign of trust in the view of environment. Many communicated that Finnish production is well regulated and supervised, and thus domestic production was often directly seen as indicator of lower environmental impacts, especially in the group of fairly pro-environmental participants.

- *'It is rather clear, or at least I hope so, that domestic production methods are rather good. They don't stress the environment at all, or at least there is no excess load to environment. All what you do has an impact of some kind, after all.'*

  (*Male, 54 years, fairly pro-environmental group)*

Seasonal production

Seasonal production was often associated with domestic production and often only as a matter of food taste in the fairly pro-environmental groups. Only by a few fairly pro-environmental participants spontaneously linked seasonal products to environmental impacts of food, and seasonality in a wider concept was discussed just very little in the view of the environment in the fairly pro-environmental groups. Those who made the link between seasonality and the environment brought up though, that Finnish greenhouses might consume a lot of energy in the mid-winter. Other links between referring seasonality were self-picked berries and mushrooms. Two fairly pro-environmental participants also noted that domestic root vegetables can be considered as environmentally friendly.

However, majority of the highly pro-environmental participants seemed to be very aware of the environmental benefits of seasonal food production, and furthermore, they perceived it not just as a matter of domestic production, like the fairly pro-environmental participants seemed to.

- *'Someone mentioned here that it is nicer to eat vegetables in San Francisco than here (in Finland). It is all that local versus long distance-food thing. I think the point is how much extra effort you need to put in to get a non-local animal or vegetable grow here and generate food. ... Like for instance, if someone would start farming bananas in Helsinki.'*

  (Male, 34 years, highly pro-environmental group)

Organic production

Many participants considered organic production to indicate lower environmental impacts, compared to conventionally produced food products. Common arguments for organic production were that it uses less environmentally harmful toxins and fertilizers. Furthermore, many found the word 'organic' as a self-explaining word, and thus, as a somewhat synonym of

environmental friendliness. Overall it seemed that, how the participants associated organic food greatly exceeded the criteria of organic production.

- *Organic production of course, as it uses less of all toxins and fertilizers. That should be a matter of course.*

  (Female, 53 years, fairly pro-environmental group)

Organic products seemed to indicate a large number of things to the participants, not just lower environmental impacts. Organic products were linked strongly to ethical considerations, especially animal welfare, healthiness, food safety and authentic taste.

Product packaging

Food packaging was one of the most spontaneous and strongest environmental indicators of environmental impacts of groceries in the study. The participants evaluated environmental impacts by the total amount of the packaging, especially how many layers of packaging there were, what the packaging material was, if the package was recycled or recyclable, and generally, it the product was in overall 'wisely packed'. Majority of participants seemed to consider product packaging as a rather straight forward indicator of lower environmental impacts. Furthermore, some thought that if the product packaging could be recycled and it will be recycled, there will be no environmental impact at all.

- *Sometimes it is just so obvious, like for instance if you see a product which has been stupidly multi-layer packed or something else. You can just see that it makes no sense and then it is an easy decision not to buy it.*

  (Female, 29 years, fairly pro-environmental group)

A few participants however brought up that product packaging can be important in the view of protecting the food. It was furthermore pointed out by a few, that food waste can actually be a bigger environmental issue than the food waste.

Level of processing and food additives

As the participants thought the majority of their overall impact on the environment comes from different types of energy consumption, level of food processing was similarly regarded as an indicator of food products environmental impacts. Both the fairly- and highly pro-environmental participants seemed to use the level of food processing as an simple, easy-to-understand indicator of environmental impacts. Furthermore, they strongly associated the number of food additives with environmental impacts, as many argued the number of food additives to indicate the level of food processing as well.

- *'I think the products which have been processed a lot and are full of artificial flavours have definitely an impact. All that energy used….'*
  (Female, 28 years, fairly pro-environmental group)

- *'There are so many unnecessary things. Big factories prepare the food half-ready, it is not necessary. When I go to a grocery, I have to buy everything wrapped, cooked, seasoned, larded, whipped and boiled. I think it all makes a difference the big picture. There are so many phases and they all consume energy…'*
  (Female, 64 years, fairly pro-environmental group)

4.8.2 Indirect indicators

In addition to the direct indicators described above, there were also some indirect associations between food and environmental impacts. The associations are presented in the following.

Authentic taste

Many participants communicated that food that has an authentic taste is associated with little processing and having no additives, which was considered to be an indirect indication of lower environmental impacts. Additionally,

authentic taste was considered to be ‘natural’ or ‘straight from the nature’, and thus, some participants considered it as a sign of lower environmental impacts as well.

- *‘If we are talking about environmental friendliness here and what is ‘straight from the nature’ and what is not, then you could think that the taste is authentic or honest, when the product is environmentally friendly.’*

  (Male, 43 years, fairly pro-environmental group)

‘Cleanness’

Many participants made links between food ‘cleanness’, authentic taste and environmental impacts, possibly via perceptions towards organic production presented earlier. Additionally, food ‘cleanness’ seemed to have linkages to wider food safety.

- *‘I link it to cleanness in a way. I have an idea, that if a product is environmentally friendly, it means that it is rather clean as well. And if it clean, it tastes better too.’*

  (Male, 31 years, fairly pro-environmental group)

Quality

Many participants had multiple environmental considerations related to food quality. Generally, it seemed that the participants considered high quality food product to be unprocessed, to have no additives and often to have an authentic taste. Thus, these attributes combined seemed to indicate lower environmental impacts. Additionally, many articulated that a food product which has high overall quality is assumed to have lower environmental impacts as well. Thus, it seemed that overall product quality created trust that environmental considerations are handled in a quality manner too.

- *‘I am feeling that the product has better quality after all though.’*

  (Female, 28 years, highly pro-environmental group)

No meat product

Some participants brought up the idea that meat products have greater environmental impacts than vegetable based products. A few justified this buy explaining that it could be more efficient to eat the animal's food than grow up the animal and then eat it.

- *'If you are thinking what has the lowest impact, I think the most important thing is that its vegetable based food… Basically, that there would be no meet at all.'*

  (Male, 27 years, fairly pro-environmental group)

Healthiness

Due to the fact, that food authenticity and authentic taste was linked to lower environmental impacts via low processing levels, lack of food additives, environmentally friendly products were often considered to be healthy as well. Overall it was indicated by many participants, that what is 'natural' is healthy as well.

'What other things you relate to environmentally friendly products?

- *I think it is healthy as well'*

  (Female, 39 years, fairly pro-environmental group)

Ethicality and animal welfare

The strongest link to between ethicality and the environment seemed to be drawn via organic production. As organic production was seen generally to indicate lower environmental impacts, and organic products seemed to be favoured often due to better animal welfare, some participants linked ethicality to lower environmental impacts as well.

'What you think, what other properties you could relate to environmental friendliness?

– *I would guess ethicality is one thing.'*

(Female, 26 years, fairly pro-environmental group)

4.9 Attitudes and perception for decreasing impacts

The focus groups revealed a wide range of different attitudinal factors and perceptions relating to the idea lowering the personal environmental load. The findings are divided into positive and negative attitudinal factors and other perceptions.

4.9.1 Positive attitudinal factors

The most relevant positive attitudinal factors brought up during the focus groups were occurrence of biospheric and altruistic values, guilt of the environmental impact of own consumption and perceived ability to make a difference as a consumer.

Biospheric values

In both the fairly- and highly pro-environmental groups, biospheric values were communicated by many, but however the biospheric values seemed to be somewhat stronger and more freely communicated in the groups of highly pro-environmental behaviour. Some participants in the fairly pro-environmental groups also communicated that they have a will to live ecological life and to pursue something else would be against their values.

Some participants in the group of highly pro-environmental participants communicated high connectedness with the environment and nature by partly questioning the sustainability of our current lifestyle.

– *'I don't want to sound like a hippie or anything, but the word 'environment' reminds me of someone saying, that it is weird that we are using that word at all, as it makes you feel that you are not part of it. You are in the hole of a donut and the environment is all*

around you. I just think the word 'environment' illustrates the detachment rather well.'

(Male, 34 years, highly pro-environmental group)

Some participants in the highly pro-environmental group furthermore brought up the idea, that environmental well-being is the basis for our well-being and high quality food.

- *'Let me say one more thing. If we collect the food from the land, we shall never piss on that land. We should appreciate the land as it feeds us. The whole cycle works this way, if we pollute our water bodies, polluted water we shall drink…*

  (Female, 47 years, highly pro-environmental group)

Altruistic values

There seemed to be altruistic values in all the focus groups, but the highly pro-environmental participants communicated much stronger altruistic values related to environmental issues than any other group. In the fairly pro-environmental groups, it seemed that despite there were some indications of altruism, the link between human wellbeing and the current state of the environment was a bit unclear to many. In comparison, greater environmental awareness of the highly pro-environmental participants seemed to underpin altruistic values, especially in the environmental context.

- *'… I would like to believe, that people have, at least to some extent, a spontaneous will to live in a way, which enables wellbeing of other people as well. Additionally, I think that generally people want to be aware of the world around us, and live in a right way. We want to consume ethically and rightly'*

  (Male, 34 years, highly pro-environmental group)

Guilt of the environmental impacts of own behaviour

A few participants in all the focus groups brought up that they are occasionally feeling guilty of their own behaviour as a consumer. Especially the fairly pro-environmental participants seemed to feel guilty if they knowledged that something what they do has a great environmental impact, but cannot do anything about it. The highly pro-environmental participants, however, seemed to be more relaxed in this context as many indicated that they have changed their behaviour according to their knowledge of what is good and what is bad.

- *'In theory, I know what I should do better, but I feel very guilty that I don't do it.'*

  (Female, 25 years, fairly pro-environmental group)

- '*I have read the facts… And then I don't feel that guilty anymore.'*

  (Male, 40 years, highly pro-environmental group)

I can make a difference as a consumer

One distinctive factor between the fairly and highly pro-environmental groups was that the highly pro-environmental participants seemed to believe that their own behaviour makes a difference in the big picture.

- *'… Gandhi said that 'be the change you want to see'. So it is the change we are looking at here. It is unethical to say, that other people should make certain decisions and I wouldn't need to change. If I change, then there is a change that other people will change too.*

  (Female, 47 years, highly pro-environmental group)

There seemed to be a few similar perceptions in the fairly pro-environmental groups, but however, many fairly pro-environmental participants communicated that what they do does not have significance at all.

– *'I have visited Peking and I have seen how there is a cloud of polluted air on the town all the time, and you nearly cannot see any sunlight at all. There are billion people in China and they are just about to getting started in consumption. What I could do as a Finn does not have any importance at the global scale. I simply cannot destroy or save the environment by my behaviour alone. That is why I don't really think about it at all.'*

(Male, 31 years, fairly pro-environmental group)

4.9.2 Negative attitudinal factors

Many negative attitudinal factors seemed to be formed by believes that the environmental impacts of food are not significant and perceptions of the sources of the environmental impacts of food, presented in the chapter 3. Additionally, a perception of lack of personal ability to make a difference, presented earlier as well, can be seen as an important negative factor too.

In addition to factors mentioned above, there seemed to be one more rather relevant finding. Some of the fairly pro-environmental participants seemed to strongly link lower personal environmental impact to lower quality of life.

– '*You can make this eco-thing as hard as you want to for yourself. It needs to be within certain healthy limits. …all that hippie hassle, you should need to give up so many things in your life. You may not want to do it, or in practice, you are just not able to.'*

(Male, 43 years, fairly pro-environmental group)

4.9.3 Other relative perceptions

In addition to significant attitudinal factors, other significant perceptions were communicated by the participants as well. Lack of knowledge, energy and time, as well as the impact of habits and routines were perceived as prohibitive factors in decreasing personal environmental load.

Lack of knowledge, energy and time

Many fairly pro-environmental participants found evaluating personal environmental load difficult, as presented earlier, and due to this difficulty many participants pointed that they do no simply energy and time to seek, evaluate and compare environmentally friendly food products, even though they would like to consume in environmentally sustainable manner. Also some participants in the highly pro-environmental group mentioned that they often stick with the choice they have once made, as it is time consuming to do all the investigation what product is a good choice overall and what is not.

- *'If you are in a hurry in a grocery, it could be that you don't have time to stop thinking. You might have just 15 minutes for shopping before you need to collect your child from the day-care or something.*

  (Female, 42 years, fairly pro-environmental group)

Additionally some participants pointed out that the lack of general knowledge of impacts of different food choices and what is the total benefit of certain choices for the overall environmental impacts, is highly de-motivating.

- *'I am feeling that the issue for many is that the values might be right, but many don't know what the big picture is. Therefore someone might live a very ecological life, but then they might take a holiday flight to south and what is the big picture after that? You need to understand the big picture and you should be able to proportionate the impact of different things, to understand how this thing works.'*

  (Male, 27 years, fairly pro-environmental group)

Habits and routines

Majority of the participants, even in the highly pro-environmental group mentioned in some point in the discussion, that food choices are in the end of the day commonly defined but routine and habits. Many brought up that they commonly buy all their food from the same shop, they often do exactly the same shopping tour and always buy the same products. This seemed to be the case especially in weekdays; some pointed out that weekends are the time to try

something new and break the routines; however it was acknowledged that also in the weekends the basic products stay the same.

- *'I go always to the same S-Market, I always make the same round, and I am so fixed to certain things, that I probably see only the products I want to buy. So, you tell me what is the buying criteria then?'*

  (Female, 26 years, fairly pro-environmental group)
- *'I would say that its quite the same stuff always. You could do the shoppings in 5 minutes just by walking through the store and taking what you need. Often you have done the decisions in advance too, you know what you wanna buy, as you have bought it before as well, and the analysis have been done earlier.'*

  (Male, 31 years, fairly pro-environmental group)

4.10 Carbon footprints and carbon labels

When the group discussions eventually moved to phase when the concept of carbon footprint and carbon footprints of food were discussed, it was evident that the concept is generally poorly known and it is perceived partly similarly and partly differently compared to the more general perceptions towards environmentally significant food consumption, presented earlier.

4.10.1 Level of knowledge

Even in the group of the highly pro-environmental participants, no words such as 'climate change', 'green house gases', or 'global warming' were spontaneously mentioned at all, which could indicate relatively low awareness or perceived importance of the climate change. Discussion furthermore revealed that the concept of carbon footprint is quite unknown to some consumers; even though they might recognize the word, the actual content and definition is poorly known and often misunderstood.

Definition

When the participants were asked to spontaneously define what a product carbon footprint is, great majority of the fairly pro-environmental participants communicated that carbon footprint stands for all the environmental impacts or simply use of all the natural resources. Many fairly pro-environmental participants also defined carbon footprint only as energy consumption.

- *'All what I wrote there was all the pollution and environmental load.'*
  (Male, 31 years, fairly pro-environmental group)

- *'It is all the energy and pollution.'*
  (Male, 29 years, fairly pro-environmental group)

However, the highly pro-environmental participants found the concept of carbon footprint quite differently compared to the fairly pro-environmental participants. Non in the highly pro-environmental group thought that carbon footprint stands for all the environmental impacts or use of natural resources. Furthermore, only one highly pro-environmental participant related to carbon footprint just to energy consumption. All but one participant defined the carbon footprint as carbon dioxide emissions and many included at least some idea of the product life-cycle in their definition.

However, none of the participants in the highly pro-environmental group mentioned other than carbon dioxide emission in their definition, even though it was revealed later on in the discussion, that a few participants had heard of the importance of methane for the carbon footprint.

- *'Carbon footprint means how much it creates carbon dioxide emission during the production and use, including all the ingredients, packaging, transportation etc.'*
  (Male, 34 years, highly pro-environmental group)

Even after the participants had been educated by giving them a short description of a product carbon footprint, many seemed struggle what it really means and what it stands for.

‘*Why are you finding it difficult to understand?*

- *I think that... actually it is hard to even follow this conversation. I don’t really know what we are talking about here.’*

(Female, 28 years, fairly pro-environmental group)

Sources

Majority of the participants in all the focus groups seemed to perceive the sources of carbon footprint of food quite similarly to overall environmental impacts of food, as indicated by the given definitions of a product carbon footprint as well, discussed above. Thus, majority of the participants, also in the highly pro-environmental group, communicated the sources of carbon footprint of food to be transportation, processing and waste from packaging. Additionally, it was pointed that meat products have a large carbon footprint, compared to vegetable –based products.

- ‘*What is the impact of transportation, what are the ingredients and from how far they have been transported. Additionally, the level of processing and also if the product is animal or vegetable based.’*

(Male, 33 years, fairly pro-environmental group)

4.10.2 Perceptions

Negative

The links between food and environment, presented earlier in this chapter, seemed to have an impact on how the participants in all the focus groups found the idea and purpose of carbon footprint of food products. Therefore, common negative attitudes towards carbon footprints were, for instance, that the environmental impacts of food are not significant, the consumers cannot make a difference, and lower environmental impacts and lower carbon footprint lowers the quality of life in the view of food as well. Great majority of the participants perceived environmentally friendly food to be more expensive too. Furthermore,

some brought up the lack of time as well and hoped the carbon label to be as easy to understand as possible.

– ‘*It might me just me and my shopping habits, but if I am hurry, there is no way I could start thinking what those labels are; 200 grams of something per what? Trying to learn all these is getting pretty troublesome. It should be easier to digest.’*

(Male, 43 years, fairly pro-environmental group)

One of the negative perceptions seemed to be as well, that a few participants, both in fairly and highly pro-environmental groups, communicated that carbon footprint might not be a good indicator at all, as there is not even yet general agreement whether the man-made climate change exists at all.

– ‘*Does this whole thing mean, that scientists have finally agreed whether climate change exists or not?’*

(Male, 31 years, fairly pro-environmental group)

A relatively low perceived importance of climate change, indicated by many participants, seemed to underpin also how some participants perceived carbon footprints and carbon footprint labels in comparison to other environmental criteria. Majority of the participants, both in fairly and highly pro-environmental groups, brought up that carbon footprint is just one criteria of many, and they seemed to be more interested in wider environmentally friendly food consumption, rather than just focussing on climate change impact. Thus, many perceived carbon footprint simply as too narrow criteria.

– ‘*It definitely would not make any harm, it is more information after all, but it can give you an information overload though. I would personally prefer something that is not focussing climate alone, as there are other environmental issues than just the global warming. It should be something which includes all the environmental impacts, but I guess it would be pretty hard...’*

(Female, 25 years, fairly pro-environmental group)

Additionally, it was also pointed out by a few participants that decision making is already really hard and they did not want have any more new criteria. However, still many preferred the carbon footprint labels to other types of climate communication when prompted.

- *'I am really hoping that there won't be a notebook of labels with every product you buy in ten years' time.'*

  (Male, 31 years, pro-environmental group)

Positive

Despite the many negative perceptions, there were also a range of positive attitudes and perceptions to be recognized from the focus groups. A great majority of participants indicated generally very positive attitudes towards the information of the carbon footprint and carbon labelling of food. Many participants in both fairly and highly pro-environmental groups mentioned that all the information is for good, and as many recognized the concept of carbon footprint to be rather new, majority of the participants hoped to get various types of carbon footprint information, not just carbon labels. Some participants also pointed out that if carbon footprint of different foods would be known, that would help them to cut off the worst products from their shopping lists.

- *'I think it could impact on me in a way that if I buy a product which has an insane number, then I could think that I don't really need this, and then I would not buy it next time. I think it would open my eyes.'*

  (Female, 28 years, fairly pro-environmental group)

Information needs in different product categories

There seemed to be some product categories, such as meat and dairy products, which were found to be especially interesting in the view of carbon footprint. Thus, some participants wanted to get those product categories labelled especially. However, some participants wanted to know the carbon footprints of

all the products in all the product categories to get a wider understanding what are the sources of carbon footprint of food in general.

Lack of trust to environmental claims of companies

Surprisingly many participants both in fairly and highly pro-environmental groups seemed to rather actively question whether the carbon labels can be trusted at all and they wanted to know who is behind the claim of certain carbon footprint. Generally the participants showed great distrust towards environmental claims of food companies and many said that carbon footprints should be calculated, or at least inspected by a neutral third party organisation. Additionally, some demanded public intervention in this matter via a law or regulation which would define common rules for carbon footprint communication.

- *'You can assume, that when a company is big and it is all about the money, there is always someone to made up a way to cheat. I mean not necessarily to cheat, but still do it in somewhat wrong way. It could be better if there would be someone to make sure that it's done right. I know that everything cannot be monitored, but still there should be someone to make inspections every now and then. And everything should be documented right too.'*

  (Female, 28 years, fairly pro-environmental group)

5 DISCUSSION

The purpose of this study was to build broad understanding of consumer perceptions of environmentally and climatically significant food consumption, which has been approached by studying consumer perceptions in five focus groups and reviewing the current literature available. In this chapter, I will answer to the initial research questions of

1. What are the consumer barriers to adopting environmentally significant food consumption?
2. What are the desirable guidelines for future climate communication of food?

This chapter is divided into three sections. Firstly, I discuss the confusion over sustainability definition and sustainable behaviours. Secondly, I present the revealed consumer barriers to adopting environmentally significant food consumption, and lastly, I depict the desirable guidelines for the future climate communication of food.

5.1 Confusion over sustainability

The chapter 2 brought up some very fundamental issues relating the concept of sustainable consumption; Lele (1991) has evidenced that there is a great inconsistency and significant weaknesses in how the concept is applied and understood in the mainstream use. My findings during the literature review support this, as it seems that even the sustainability-related consumer behaviour terminology is quite dispersed, even though the core phenomenon can stay the same. Furthermore, the terms ‘sustainable’ or ‘green’ are problematic by their definition (Peattie, 2010), as they present the claim of something being ‘green’ or ‘sustainable’ in a definite matter, even though in practise, the definitions are comparative rather than definite.

There is seems to be confusion not only over the definitions of sustainability, but over the understanding of what the sustainable practices and behaviours are, as

well. White et al. (2009) concluded that there is currently no agreed set of priority for pro-environmental behaviours or agreements on the foods which comprise a low impact diet. Thus, I reviewed the recent knowledge of what food consumption related behaviours have been shown to have positive environmental significance and defined the behaviours of 'environmentally significant food consumption', for the use of this study. Environmentally significant food consumption was found to consist of just two behaviours, which were:

1) Consumption of environmentally low-impact and nutritious ingredients, forming vegetable rich, seasonal diet
2) Minimising the post-purchase food waste.

This background gives significant strength to the terminology of Stern (2000), used in this paper. Stern (2000) has divided pro-environmental behaviours into behaviours which have environmental significance and behaviours which have just environmental intentions, but no environmental significance. Following that conception and the definitions of environmentally significant food consumption above, I have a distinct framework for evaluating consumer perceptions of environmentally significant food consumption.

5.2 Barriers to adopting environmentally significant food consumption

The Theory of environmentally significant behaviour of Stern (2000), including the Attitude-Behaviour-Context (ABC) theory and the Value-Belief-Norm (VBN) theory, seems to be useful in explaining what the barriers to adaptation of environmentally significant food consumption are. Especially the ABC theory seems to offer an easy-to-understand core framework for evaluating the barriers to environmentally significant food consumption. The ABC theory assumes that attitudinal factors are able to predict and explain behaviour the best when contextual factors (including personal capabilities and habits and routines) are neutral or zero. Thus, whenever non-neutral contextual factors, personal

capabilities or habits and routines occur, they are likely to have a negative impact on the realization of personal pro-environmental norms.

5.2.1 Attitudinal factors seem supportive

The findings as well as the literature showed that many consumers hold positive attitudes towards environmental matters and generally the environmental concern of the consumers seems to be high. Furthermore, especially highly pro-environmental consumers seem to have strong biospheric and altruistic values, and they believe in their ability to make a difference as a consumer.

According to the VBN theory, personal norms to take pro-environmental action are activated by personal values combined with the believe that environmental conditions threaten the things individual values and that the individual can act to reduce the threat. Thus, the personal norms to take pro-environmental actions seem to have high likelihood to be activated according to the VBN theory, especially in among the highly pro-environmental consumers.

5.2.2 Information asymmetry

Despite these environmental concerns and supportive values towards environmental matters, which seem to have potential to turn into personal pro-environmental norms, the findings as well as the literature indicated that environmental considerations have spontaneously very little room in the consumers' decision making regarding food. Focus groups showed that only the highly pro-environmental consumers seem to take spontaneously environmental considerations into account in their food related decision making. The findings, furthermore, indicate that the highly pro-environmental consumers seem to a greater number of decision making criteria into account than the fairly pro-environmental consumers, which seem to not have been discussed in the sustainable consumption literature before.

The findings of the focus groups furthermore indicated that even the fairly pro-environmental consumers seem to find it hard to evaluate their personal

environmental load and there is some confusion what behaviours really make a difference to the overall personal environmental load. Similar results are to be seen in the literature as well, and for instance, a paper of Bonini and Oppenheim (2008) concluded that the lack of awareness of eco-friendly behaviours is one of the barriers to attitude –driven consumer behaviour.

Interestingly, however, my findings evidenced that the highly pro-environmental consumers are finding the evaluation of their personal environmental load rather easy, in contrast to general notions in the literature. It seems, though, that heuristics the highly pro-environmental consumers use as the basis for their evaluation are not in the streamline with the recent knowledge of environmental sustainability, presented in the chapter 3.

Food consumption is one of the areas, which have the biggest impact on the environment, as has been evaluated by the Danish Environmental Protection Agency (2002) and Seppälä et al. (2009), for instance. Still, not even the highly pro-environmental consumers spontaneously consider the environmental impacts of food to be important at all. Furthermore, the focus groups showed that the actual impacts, as well as the sources of the impacts, are very poorly known even by the highly pro-environmental consumers, who claim the evaluation of their environmental load to be generally easy.

Owen et al. (2007) has got similar results by showing that the linkages between food and the environment are not spontaneously made. Furthermore, Owen et al. (2007) found that even the consumers with the most pro-environmental beliefs, who have the best understanding of the sustainability issues, do not consider food as an environmental sustainability issue. Therefore, these findings seem to follow the results of the previous studies very well.

Even though the linkages between food and the environment are not spontaneously made, the focus groups showed that many consumers are able to make links when prompted. Furthermore it was found, that the highly pro-environmental consumers seem to be able to making significantly more environmental linkages to food than the fairly pro-environmental consumers.

Generally the environmental impacts of food were perceived to come mostly from product packaging, energy consumption in the food processing and the distance of food transportation. Furthermore, this perception seemed to form basis of how the consumers evaluated the environmental significance of groceries. The findings of the focus groups showed that the consumers generally focus on product attributes such as

- Local food
- Country of origin
- Domestic production
- Organic production
- Product packaging
- Level of processing

when evaluating the environmental significance of a food product. In contrast to the consumer perceptions, the evidences presented in the chapter 3 present that none of these product attributes has been showed to have environmental significance.

The only environmentally significant behaviours related to food consumption, presented in the chapter 3, (1) consumption of environmentally low-impact and nutritious ingredients, forming vegetable rich, seasonal diet, and (2) minimising the post-purchase food waste, were very poorly known. Only a few fairly pro-environmental participants made spontaneously links between seasonality and environmental impacts of food, and similarly, only some fairly pro-environmental participants brought up the idea that vegetable based foods have smaller environmental impacts than meat based products. Furthermore, in general, there seemed to be very little knowledge of what the low-impact ingredients generally are and what is the real environmental benefit of avoiding food waste.

The findings regarding to the highly pro-environmental participants indicate that they have slightly better understanding the benefits of seasonality and vegetable

based products, however. Still they held the very same false assumptions of what the environmentally significant consumption behaviours are. Additionally, not even the highly pro-environmental consumers new that dietary choices are very efficient way to decrease the total personal environmental impacts.

Owen et al. (2007) has presented somewhat similar results from their research. They also found that many consumers are capable of discussing the environmental linkages of food when asking it directly, and similarly, the product attributes the consumers communicated to indicate lower environmental impacts were quite the same. However, in their (Owen et al., 2007) study, the consumers seemed to acknowledge better the importance of seasonal production and food waste, even though the general consumer heuristics look overall rather similar. The studies of Lyndhurst (2009) and Owen et al. (2007), furthermore, indicate that the number of environmental linkages increases as pro-environmental beliefs of the consumers' increase, which follows the findings of the focus groups well too.

5.2.3 Lack of time, habits and routines

The focus groups showed that majority of the consumers feel that they do not have time and energy to seek, evaluate and compare environmentally significant products, even though they would like to make environmentally significant food choices. The lack of energy and time were highlighted due to the fact, that many focus group participants considered the evaluation of the environmental load to be difficult and finding environmentally friendly products was considered to be complex. Additionally, the findings showed that even the decision making of the highly pro-environmental consumers seems to be largely defined by the routines and habits learned.

These findings seem to be supported well in the current consumer behaviour literature and generally the lack of time and the role of habits and routines have been widely acknowledged in the general consumer behaviour literature as barriers to behavioural change.

5.2.4 Summary of the current barriers

According to the evidences presented above, it could be argued that as the consumers

A. Do not know that food is the most important contributor in personal environmental load
B. Do not know what the most significant sources of the environmental impacts of food are
C. Hold false perceptions what product attributes define a environmentally significant food product
D. Are not aware that dietary choices are very efficient way to decrease the total personal environmental impacts,

they do not perceive food as significant environmental matter as they should and they focus on elsewhere, if wanting to decrease their environmental load. Thus, whatever environmental attitudes the consumers hold, they are not likely to turn into environmentally significant food consumption due the great information asymmetry.

If however, the consumers would have knowledge enough to turn their personal pro-environmental norms into environmentally significant food consumption, there seems to be some other barriers to environmentally significant food consumption as well. The consumers seem to perceive that they do not have time and energy to make environmentally significant food choices, and furthermore, the decision making seems to be driven largely by habits and routines anyway.

To conclude, the barriers to adopting environmentally significant food consumption seem to be the great information asymmetry, perceived lack of time and energy to make environmentally significant food choices, and significant role of habits and routines. These barriers seem to account for the current attitude-behaviour gap, at least to some extent.

5.3 Guidelines for future climate communication of food

The consumer barriers to adopting environmentally significant behaviour seem to form the basis for consumer perceptions of climatically significant food consumption as well. However, in addition, there seemed to be other significant issues related to the product carbon footprints as well.

5.3.1 The basis for climate communication

Focus groups indicated that not even the highly pro-environmental consumers perceive climate change as one of the most important environmental issues. Furthermore, the findings showed that there seem to be some climate change criticality among the consumers and even some the highly pro-environmental consumers seemed to be doubtful whether the man-made climate change exists at all.

When it comes to the actual indicator of the climate change impact, carbon footprint, the focus group discussions showed that the concept of carbon footprint is quite unknown to many consumers; even though many can recognize the word, the actual content and definition is poorly known. Thus, the concept of carbon footprint was rarely linked to climate change at all.

Commonly the carbon footprint is falsely thought to stand for all the environmental impacts or simply the use of natural resources. Additionally, many focus group participants perceived carbon footprint only as energy consumption. Very similar results have been found by Gadel and Oglethorpe (2011) who found that 89 percent of the UK consumers do not know what a carbon footprint is or understand it wrongly.

Overall, it seems that many consumers perceive the carbon footprint of food products rather similarly to overall environmental load of food, as they do not know what the difference between the two is. Therefore, the focus group participants thought also the carbon footprint of food to come from product packaging, energy consumption in the food processing and the distance of

transportation. Furthermore, their spontaneous perceptions towards carbon footprint were very similar to the perceptions of the overall environmental impacts of food.

After the focus groups participants were educated what a carbon footprint is, great majority of communicated that they are more interested in the overall environmental impacts of food, not just climate change impact. Many seemed to perceive a carbon footprint simply as too narrow criteria, which is somewhat against the overall very positive attitudes found in the earlier studies made in the field.

5.3.2 Challenges of carbon footprint labelling

The focus group participants generally felt that decision making in food is already really hard, and generally, many did not want to have any more new decision making criteria and it was often hoped that carbon labels should be as easy to understand as possible. Furthermore, findings of a report of Cabined Office (2008) indicate that the consumer use very limited time for their decision making; it has been estimated that the consumers spend just around three seconds in average for an individual purchase decision. Routine and quick habitual purchases then seem to be challenge the fundamental idea of carbon labelling; just small number of the consumers read any packaging information at all (Cabinet Office, 2008).

A study of the Cabinet Office (2008) has however evaluated the different impacts of a multi-criteria environmental label and climate label. Their (Cabinet Office, 2008) results indicate that even though a multi-criteria label could make the consumer decision making faster and less complex, it is less likely to encourage change in the food culture towards more environmentally and climatically significant food culture. Thus, even though the consumers might see carbon footprint as too narrow criteria and demand for multi-criteria environmental labels, carbon labels seem to be beneficial to stand on their own to gain long term benefits.

As the focus group participants had very poor knowledge of the concept of the carbon footprint, many hoped to get various types of carbon footprint information, not just carbon labels. However, still many preferred the carbon footprint labels to other types of climate communication when asking directly.

Bonini and Oppenheim (2008) found that the consumers seem to quite strongly question the 'green' product claims, which is very strongly supported by the findings of the focus groups as well. Many participants both in fairly and highly pro-environmental focus groups seemed to actively question whether the carbon labels can be trusted at all and they wanted to know who is behind the claim of a certain carbon footprint. Furthermore, the focus group participants showed great distrust towards environmental claims of food companies and many brought up that carbon footprints should be calculated, or at least inspected by a third party organisation.

5.3.3 Desirable guidelines

As it seems, that many consumers

A. Do not perceive climate change as one of the most important environmental issues
B. Have false assumption what a carbon footprint is,
C. Do not know that food is one of the most important contributors in personal carbon footprint
D. Do not know what the most significant sources of carbon footprint of food are

it could be argued that there is a great information asymmetry regarding the climate change impacts and carbon footprint of food as well. Thus, it could be beneficial that the future climate communication of food focusses on consumer education, which focusses on correcting the information asymmetry presented.

6 CONCLUSION

The purpose of this study was to build broad understanding of consumer perceptions of environmentally and climatically significant food consumption, which was approached by studying consumer perceptions through five focus groups and reviewing the current literature available.

This study aimed to answer two research questions, namely:

1. What are the consumer barriers to adopting environmentally significant food consumption?
2. What are the desirable guidelines for future climate communication of food?

Previous studies have showed that the consumers communicate positive attitudes toward sustainability and they seem to have a true concern about the global sustainability issues, but they are struggling to translate this into their actual consumption behaviour. Thus, there seems to be a clear and widely acknowledged attitude-behaviour gap. To understand this gap, this study poses the following research question:

What are the consumer barriers to adopting environmentally significant food consumption?

According to the findings of the present study, it is argued that many consumers:

A. Lack knowledge that food is the most important contributor in personal environmental load;
B. Are unfamiliar with the most significant sources of the environmental impacts of food are;
C. Hold false perceptions what product attributes define an environmentally significant food product;
D. Are not aware that dietary choices are very efficient way to decrease the total personal environmental load.

Therefore, the consumers do not perceive food as significant environmental matter as they should and they focus on elsewhere when aiming to decrease their environmental load. Thus, whatever environmental attitudes the consumers hold, they are not likely to turn into environmentally significant food consumption due to information asymmetry.

If however, the consumers would have knowledge enough to turn their personal pro-environmental norms into environmentally significant food consumption, there would seem to be some other barriers to environmentally significant food consumption as well. Based on this study, the consumers feel that they do not have time and energy to make environmentally significant food choices, and furthermore, the decision making seems to be driven largely by habits and routines. These barriers seem to mostly account for the current attitude-behaviour gap, according to the findings of this study.

In order to increase environmentally significant food consumption, the study proceeded to examine the means to influence the consumer behaviour and close the gap. The second research question was phrased as follows:

What are the desirable guidelines for future climate communication of food?

It was found that many consumers:

A. Do not perceive climate change as one of the most important environmental issues;
B. Have false assumption what a carbon footprint is;
C. Do not know that food is one of the most important contributors in personal carbon footprint; and
D. Do not know what the most significant sources of carbon footprint of food are.

Therefore, it is argued that there is significant information asymmetry regarding the climate change impacts and carbon footprint of food as well. Thus, it could

be beneficial that the future climate communication of food focuses on consumer education, which emphasises the correcting of the information asymmetry.

7 MANAGERIAL IMPLICATIONS

Many attitudinal factors seem to be supporting pro-environmental food consumption. However, the current level of knowledge of the consumers related to environmental considerations of food is very poor. The consumers seem to have false assumptions and false knowledge of the environmental impacts of food, sources of the impacts, as well as, what the environmentally significant food products really are. Additionally, just few consumers are aware of the environmental impacts of primary production as well as the great potential to decrease their environmental load by food choices. Even if the consumers would have right intentions to make pro-environmental ingredient decisions, it was found, that they perceive having lack of time and energy to find the pro-environmental alternatives, and additionally, consumer routines and habits seem to be challenging the environmentally significant decision making of the consumers too.

By the current knowledge of the consumers, it seems unlikely that any environmental communications of food products could stimulate environmentally significant consumption behaviours without a supportive educational campaign or wider education scheme. The consumer education would not only have a direct impact on the great information asymmetry, but it could also enable making environmentally significant food choices faster and easier, which could indirectly have an impact on how the consumers perceive the time available to realize their personal pro-environmental norms, as well.

The consumers are already somewhat confused what behaviours really make a difference to their overall environmental load and many look at environmental claims with great doubt. Thus, it seems necessary that the future environmental communications of food products and the broader education messages are streamlined. Further, mutually supportive messages could arguably bring also some mutual benefits via increased efficiency of environmental communications. As the role of habits and routines seems to be significant in consumer decision making of groceries, the consumer education should also take

into account the habitual limitations and acknowledge, that changing the habitual food consumption to more environmentally significant has the best overall potential to improve the environmental sustainability of the consumers' food consumption in the long run. Additionally, the educational scheme should also take into account the consumer distrust toward environmental claims of food companies, and thus, the educational roles of different types of organisations should be well understood to assure the efficiency of the education.

Climate communications of food products seem to have very poor basis in general as common unsupportive perceptions dominate the consumers' perceptions. Furthermore, the consumers seem not to consider climate change as one of the most important environmental issues and many have false assumption what a carbon footprint is. When it comes to product labelling in general, it has been showed that only a small proportion of the consumers really read any packaging information at all and generally the labelling is challenged by the fact the consumers spend just around three seconds in average for an individual purchase decision. Taking these challenges into account, climate change communications through carbon labels are not currently likely to have an impact on the consumers. Thus, it could be beneficial that also the future climate communication of food focusses on consumer education. Carbon labels could have an educational role of some kind in the wider consumer education, but the consumer education can certainly not focus on carbon labelling alone if wider long run change in the food culture is pursued.

8 LIMITATIONS AND FURTHER STUDIES

In the last chapter of the thesis, the limitations of the study as well as the recommendations for further study are presented.

8.1 Data limitations

As this study is based on consumer perceptions in the focus groups, the study results cannot be seen as direct indicators of actual consumer behaviour, even though some findings are very clear. If the actual consumer behaviour could be studied, it could result in somewhat different picture of the current attitude-behaviour gap in food consumption. Especially it seems likely that behavioural examination of the attitude-behaviour gap could reveal more external contextual factors which restrain consumer behaviour, which were now very little discussed, as well as analysed in this study.

Generally it could be beneficial as well, if the attitude-behaviour gap would be defined better in the national context, as now the phenomenon stayed quite vague and the existence of the attitude behaviour gap was taken as given in the research design. Defining the issue better would possibly also help to create better issue specific solutions as well.

8.2 Impact of participant selection

The pre-focus group questionnaire used in participant recruitment defined if the participant was pro-environmental or not, by how the potential participants rated environmental friendliness as a decision making criteria, which is not actually an indicator of pro-environmental behaviour at all. In the future, it might be more desirable to choose the pro-environmental participants by assessing the real behaviour of consumers, if possible, and choosing the consumers whose behaviour has environmental significance, to the actual study. However, in general, when studying environmentally significant consumer behaviour, it might be more interesting to focus on environmentalist consumers, and thus, let

the key variable to be the attitudinal variables of pro-environmental intentions, not the actual environmentally significant behaviour.

Generally, it should be noted as well, that this study focussed on just certain group of environmentally conscious consumers, there are limitations to generalisation of the findings. However, as the participants of this study were more pro-environmental than generally, or at least they claimed so, some generalizations to wider populations can be considered safe. Especially the findings related to information asymmetry seemed to be quite safe to assume to apply to the wider populations as well.

8.3 Broader sustainability approach needed

It was evident in the focus groups that environmental considerations are part of wider sustainability considerations and the environment alone is considered and discussed just rarely by consumers. The environment was of then cited alongside with wider ethical concerns. It could be interesting to analyse the overall consumer perceptions of sustainable consumption in the focus groups, and map the links consumers make within the larger sustainability umbrella, than just the environment and the climate. Furthermore, the current theoretical framework could be beneficial to expand to overall sustainability of consumption, and evaluate consumer behaviour and possible inconsistencies through a wider multi-dimensional framework. Further analyses of the current data could build further understanding of what is the role and significance of the environment in the group of wider ethical concerns, and how its importance could be increased within the total concept of ethical concerns. It is possible that the environmental considerations are not the only information asymmetry related to food.

In general, it could be argued, that the concept of pro-environmental food consumption should be studied in broader context and take the general ethical perceptions into account as well. This is supported by focus groups, which showed that the pro-environmental food consumption is part of broader concept of ethical consumption. Therefore, if focussing just on environment, the research might fail to increase overall understanding of the phenomena.

8.4 The characteristics of a rebound effect

It should be noted, that as the environmentally significant behaviours are likely to reduce consumer costs, a rebound effect is likely to occur. As consumers are saving money by adopting environmentally significant food consumption, it is likely that their consumption elsewhere increases, which arguably takes back some of the positive effect gained. Therefore, it seems, that consumers should be aware of, and committed to, all the environmentally significant behaviours related to their consumption, otherwise the benefit gained by environmentally significant food consumption can be lost in some other area of consumption due to the rebound effect.

The rebound effect from the adaptation of environmentally significant food consumption should be studied to understand the characteristics of it better, not only in the Finnish context, but in the more general level as well. It seems again likely, that possible information asymmetries can have an impact on the final outcome: if consumers do not know which behaviours are environmentally significant, their behaviour might cause a rebound, even though they had pro-environmental intentions.

8.5 Perceptions with correct information

As presented earlier, there is a great information asymmetry; pro-environmental consumers are not aware of either the sources or the impacts of food consumption to environment. Furthermore, consumers seem to be not aware that focussing on food ingredients is the most efficient way to cut one's personal environmental load. Thus, it would be interesting to study how consumer perceptions toward environmentally significant food consumption change if the information asymmetry is corrected. Furthermore, correcting the information asymmetry could have a significant impact on how consumers perceive the climatically significant food consumption and carbon footprint labelling. Understanding the consumer perceptions when there is no information asymmetry could help in constructing understanding of pro-environmental

behaviour of the future. However, how to get the asymmetric information minimised, is a research theme of its own as well.

8.6 Formation of information asymmetry

This study showed that even the highly pro-environmental consumers are unaware of the importance and environmental significance of food. Therefore it seems that there is an urgent need for nation-wide education scheme to correct the current asymmetric information among consumers. However, before launching a nation-wide scheme, it should be acknowledged where and how consumers have learned the current false information, how consumers could unlearn and learn by various types of educational acts, and also, how the source of the education information impacts on the learning or unlearning efficiency.

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APPENDIX 1 The participant recruitment form

MTT/ t-3467 – värväyslomake (luonnos 1)

2.1.2012

Taloustutkimus Oy/ Sari Roth

SAATTEEKSI VÄRVÄREILLE (EI LUETA OSALLISTUJILLE)

Teemme MTT:lle tutkimusta, jossa paneudutaan kuluttajien ajatuksiin elintarvikkeiden hiilijalanjäljestä ja sitä indikoivista pakkausmerkinnöistä – tutkimusaihetta ei saa tällä tarkkuudella kertoa tutkittaville. Sanomme värvättäville, että teemme tutkimusta elintarvikkeiden ostamisesta ja valintaperusteista.

Ryhmiä värvätään yhteensä 4 – jokaiseen ryhmään rekrytoidaan 10 osallistujaa. Kuhunkin ryhmään värvätään 5 naista ja 5 miestä. Osallistujat jaetaan ryhmiin ikäperusteisesti, sekä sen mukaan, kuinka he arvottavat ympäristöystävällisyyttä ruoanostoperusteena. Ryhmistä 3 toteutetaan ns. ’medium’ –kohderyhmässä. Tämän kohderyhmän päivittäisiin elintarvikkeiden ostopäätöksiin tuotteiden ympäristöystävällisyydellä on melko paljon vaikutusta. Yhdessä ryhmässä perehdytään puolestaan ns. ’heavy’ kohderyhmään. Tässä ryhmässä tuotteiden ympäristöystävällisyys saa erittäin suuren painoarvon päivittäisten ruokaostosten valintaperusteena. Ko. ryhmän ikäskaala on muita ryhmiä selvästi laajempi ks.alla.

R1) Nuoret ’mediumit’ → 18-30v.

R2) Aikuiset ’mediumit’ → 31-45v.

R3) Varttuneemmat ’mediumit’ → 46-65v.

R4) ’Heavyt’ → 25-60v.

VÄRVÄYS ALKAA…

0. Tässä puhuu XX Taloustutkimus Oy:stä hyvää päivää/ iltaa. Teemme parhaillaan tutkimusta, joka koskee elintarvikkeiden ostamista, ja sitä, millä perusteella ostopäätökset kaupassa tehdään. Olisiko teillä hetki aikaa vastata muutamaan kysymykseen?

a) Kyllä → JATKA
b) Ei → LOPETA

00. Haemme näin puhelimitse osallistujia ryhmäkeskusteluihin, joissa varsinaiset tutkimuskysymykset käydään läpi. Ryhmiä järjestetään ilta aikaan 8. ja 9.2.2012 – mahtaisiko teillä olla tuolloin aikaa osallistua parin tunnin keskustelutilaisuuteen?

a. Kyllä → JATKA
b. Ei → LOPETA

1. Ensin vähän taustatietoja teistä ja taloudestanne – kertokaahan aluksi, minkä ikäinen olette?

_____

KIRJAA IKÄ VIIVALLE JA TARKISTA RYHMÄKOHTAISET KIINTIÖT

R1) *Nuoret 'mediumit' → 18-30v.,* ***R2)*** *Aikuiset 'mediumit' → 31-45v.,* ***R3)*** *Varttuneemmat 'mediumit' → 46-65v. &* ***R4)*** *'Heavyt' → 25-60v.*

2. Mikä seuraavista kuvaa talouttanne?

a) aikuistalous
b) lapsiperhe, jossa alle 18-vuotiaita lapsia (KIRJAA YLÖS LASTEN IÄT _____)
c) yksinäistalous

(VÄRVÄÄ HYVÄ KIRJO KAIKKIIN RYHMIIN)

3. Kuka taloudessanne vastaa elintarvikkeiden ostamisesta (sisältäen tuotevalinnat/ päätöksenteon ja itse ostamistapahtuman)?

a) pääsääntöisesti/ aina minä → JATKA

b) vähintään 50% minä → JATKA
c) pääsääntöisesti/ aina joku muu perheenjäsen → LOPETA

4. Oletteko koskaan osallistunut markkinatutkimustoimistojen järjestämiin ryhmäkeskusteluihin?
a) Kyllä → KYSY 5
b) Ei → JATKA KYSYMYKSEN 7

5. Kuinka moneen ryhmäkeskusteluun olette osallistunut kaiken kaikkiaan?
a) 1-3 → KYSY 6
b) 4+ → LOPETA

6. Kuinka pitkä aika on siitä, kun viimeksi osallistuitte markkinatutkimustoimiston järjestämään ryhmäkeskusteluun?
a) Alle 6 kk → LOPETA
b) Yli 6 kk → JATKA

7. Etsimme tutkimukseemme ihmisiä eri aloilta. Oletteko itse/ onko joku lähipiiristänne (ystävät & sukulaiset/ perheenjäsenet) työssä seuraavilla aloilla?
a) Mainonta → LOPETA
b) Markkinatutkimus → LOPETA
c) Journalismi/ muu media-ala → LOPETA
d) Markkinointi ja PR-tehtävät → LOPETA
e) Pakkaussuunnittelu → LOPETA
f) Elintarvikkeiden valmistus, maahantuonti ja kauppa → LOPETA
g) Muu, mikä:

_____

VÄRVÄTKÄÄ HYVÄ KIRJO ERI ALOJEN IHMISÄ PER RYHMÄ. JOS HENKILÖ ON TYÖSSÄ ESIM. JOSSAIN JÄRJESTÖSSÄ, TARKISTAKAA MIKÄ ALAN ORGANISAATIOSTA ON

KYSYMYS – EMME HALUA RYHMIIN YMPÄRISTÖASIOIDEN AMMATTILAISIA.

8. Asteikolla 1-4, jossa:

1= Erittäin vähän

2=melko vähän

3=melko paljon

4=erittäin paljon

Kuinka paljon seuraavat asiat vaikuttavat päivittäisiin elintarvikkeiden ostopäätöksiinne…

a)	Makumieltymykset	**1**	**2**	**3**	**4**			
b)	Terveellisyys				**1**	**2**	**3**	**4**
c)	Hinta				**1**	**2**	**3**	**4**
d)	Ympäristöystävällisyys				**1**	**2**	**3**	**4**
e)	Kotimaisuus				**1**	**2**	**3**	**4**
f)	Lähellä tuotettu				**1**	**2**	**3**	**4**
g)	Luomu				**1**	**2**	**3**	**4**

TARKKAILE KIINTIÖITÄ

’MEDIUM’ –KOHDERYHMÄN TULEE ANTAA KYSYMYS 8:SSA, KOHDASSA D) YMPÄRISTÖYSTÄVÄLLISYYS ARVO 3!

’HEAVY’ KOHDERYHMÄN TULEE ANTAA KYSYMYKSESSÄ 8, KOHDASSA D) YMPÄRISTÖYSTÄVÄLLISYYS ARVO 4! LISÄKSI HEIDÄN TULEE ANTAA KOHDISSA E, F JA G ARVO 3 TAI 4; TÄLLÄ VARMISTELLAAN SITÄ, ETTÄ ’HEAVY’ RYHMÄÄN SAAPUVALLA KULUTTAJILLA ON TODELLA VASTUULLINEN KULUTTAMINEN SYDÄMELLÄÄN.

KYSYMYS 9 KYSYTÄÄN JOS 8:SSA VÄRVÄYSKRITEERIT TÄYTTYY

9. Vastaustenne perusteella näyttää siltä, että ympäristöystävällisyydellä on vaikutusta ostopäätöksiinne. Tarkentaisin vielä, kuinka paljon olette perehtynyt elintarvikkeiden ympäristöystävällisyyteen?

a) Seuraan aihetta koskevaa kirjoittelua & uutisointia ja olen itse etsinyt asiasta aktiivisesti tietoa
b) Seuraan aihetta koskevaa kirjoittelua & uutisointia aina kun kohdalle sopivasti sattuu
c) Asia ei erityisesti kiinnosta minua →LOPETA

HUOM! KAIKKIEN MUKAAN VÄRVÄTTÄVIEN TULEE ANTAA KYSYMYKSESSÄ 9 VASTAUS A TAI B.

10. Olemme järjestämässä ryhmäkeskusteluja, jotka liittyvät ruoan ostamiseen ja tarkemmin siihen, millä perusteella ruokaa kaupasta valitaan. Keskustelut ovat rentoja ja vapaamuotoisia. Niitä järjestetään ilta-aikaan ja ne kestävät runsaat 2 tuntia. Yhteen ryhmään kutsutaan 10 osallistujaa. Osallistuminen ei edellytä teiltä mitään ennakovalmistautumista, riittää että saavutte paikalle avoimin mielin ja valmiina ottamaan kantaa esitettyihin kysymyksiin ja vilkkaaseen keskusteluun. Tilaisuudessa tarjotaan pientä iltapalaa, ja luvassa on 40 euron suuruinen lahjakorttipalkinto joko S-ryhmään tai Stockmannille. Vaihtoehtoisesti voitte valita ko. arvosta Finnkinon elokuvalippuja. Ryhmäkeskustelu tallennetaan DVD:lle ja MP 3:selle. Tutkimuksen tilaaja on seuraamassa keskustelua toisessa tilassa yksisuuntaisen peilin välityksellä.

R1) Nuoret ’mediumit’/ 18-30v. → 8.2.2012 klo 16:30

R2) Aikuiset ’mediumit’/ 31-45v. → 8.2.2012 klo 19:00

R3) Varttuneemmat ’mediumit’ → 9.2.2012 klo 16:30

R4) ’Heavyt’ → 25-60v. → 9.2.2012 klo 19:00

APPENDIX 2 The focus group questions

Keskustelulomake – Lopullinen toteutunut keskustelupohja (3.2.2012)

Seuraavassa ehdotetun keskustelurungon tulkitsemiseksi on hyvä tiedostaa alkuun, että:

- ***Lihavoidut*** *sanat/kysymykset ovat tärkeitä*
- *Alleviivatutut tarkentavat kysymykset on tärkeä esittää*
- *Suluissa **ISOILLA KIRJAIMILLA** on tarkennuksia ryhmän fasilitaattorin toiminnan tueksi*

1. Esittelyt (10MIN)

Moderaattori esittelee illan itsensä ja toivottaa osallistujat tervetulleiksi. Myös illan keskustelunaihe todetaan yleisellä tasolla: ”Olemme täällä tänään keskustellaksemme ruoan valinnasta ja siihen vaikuttavista monista asioista.” Vastaajia muistutetaan siitä, että osallistumisen toivotaan olevan mahdollisimman tasapuolista ja avointa. Tässä tilaisuudessa ei ole vääriä vastauksia, sillä meitä kiinnostaa ja meitä auttaa nimenomaan teidän jokaisen ikiomat käsitykset, tavat ja tottumukset juuri sellaisina kuin ne oikeasti ovat. Osallistujia muistutetaan lisäksi siitä, että tilaisuus nauhoitetaan ja keskustelua seurataan myös peilin takaa.

Osallistujat esittäytyvät: Nimi, ikä, ammatti & perhetausta

2. Elintarvikkeiden valinnasta/ ostamisesta yleensä (20MIN)

- Kertokaa minulle mitä te syötte? Mitä ostatte kaupasta?
- Millä perusteella valitsette elintarvikkeita kaupasta? *(LISTAA FLÄPPITAULULLE)*
- Mitkä asiat koette tärkeimmiksi valintaa ohjaaviksi tekijöiksi? → Miksi?
- Elintarvikkeet voidaan jakaa moneen tuoteryhmään, kuten lihatuotteet, maitotuotteet, leipomotuotteet jne., ovatko elintarvikkeiden valintaperusteet aina samat tuoteryhmästä riippumatta, vai saavatko ostamiseen vaikuttavat tekijät erilaisen painoarvon eri tuoteryhmissä? → Miten/ Miksi?

  (TÄSSÄ OSIOSSA EI ERITYISESTI KOROSTETA YMPÄRISTÖVASTUUTA TAI HIILIJALANJÄLKEÄ RUOAN VALINTAPERUSTEENA. TAVOITTEENA ON LUODA SALLIVA KESKUSTELILMAPIIRI, JOSSA ERILAISTEN OSTAMISENPERUSTEIDEN SEKÄ ELINTARVIKKEIDEN KULUTTAMISEEN LIITTYVIEN TAPOJEN JA TOTTUMUSTEN ILMAISEMINEN ON AVOINTA JA SUORAA. TAVOITTEENAMME ON VÄLTTÄÄ SITÄ, ETTÄ KULUTTAMISEEN LIITTYVÄT YMPÄRISTÖNÄKÖKULMAT YLIKOROSTUISIVAT KESKUSTELUISSA OSALLISTUJIEN 'IMAGON RAKEMNTAMISEN' VUOKSI. HALUAMME SAADA TOTUUDENMUKAISEN KUVAN SIITÄ, KUINKA YMPÄRISTÖÖN LIITTYVÄT NÄKÖKOHDAT ASEMOITUVAT MUIHIN VALINTAPEUSTEISIIN NÄHDEN.)
- Olette hienosti analysoineet erilaisia ruoan valintaan vaikuttavia tekijöitä. Osaisitteko mennä vielä askeleen pidemmälle ja pohtia onko ruoan valinnan taustalla asioita/ tekijöitä, joita voisi jopa nimetä **arvoiksi?** → Kertokaa lisää…

3. Ympäristövastuusta yleensä & tarkemmin ruoanvalintaperusteena (30MIN)

YLEISESTI

- Unohdetaan hetkeksi ruoan ostaminen ja puhutaan vähän ympäristöasioista. Mihin asioihin liittyen/ missä yhteydessä ympäristönäkökulmat tulevat tavallisesti mieleenne?
- Osaatteko arvioida mistä alueista **oman elämänne** ympäristökuorma koostuu?

  →Mitkä ovat eri alueiden painoarvot?

  → Kuinka helppoa tai vaikeaa oman ympäristökuormanne **arviointi** yleisesti on? → Miksi?
- Näkyykö oman ympäristökuorman tiedostaminen omassa arjessasi ihan käytännön tasolla? → Miten? → Kuinka helppoa tai vaikeaa on **toimia/ tehdä valintoja** oman ympäristökuormansa pienentämiseksi? → Miksi?
- Onko suhtautumisessanne ympäristöasioihin tapahtunut muutoksia vuosien saatossa? → Kerro lisää/ millaisia →Miksi? *(ELÄMÄNKAAREEN LIITTYVÄT ASIAT, SKANDAALIT YMS.)*
- Miten uskotte asian kehittyvän omalta osaltanne tulevaisuudessa? → Miksi?

ELINTARVIKKEET

- **Onko ruoka aidosti ympäristökysymys?**
  - Kyllä: Miksi? →Miten vaikuttaa omaan toimintaanne, kuinka näkyy arjessa?
  - Ei: →Miksi ei?
- Millainen vaikutus sillä, millaisia elintarvikkeita te **ostatte** ja syötte, on ympäristöön tai ilmastoon?
- Millaiset elintarvikkeet sitten ovat ympäristön kannalta suotuisia?

  → Millaiset asiat määrittelevät ympäristön kannalta hyvän elintarvikkeen?

→ Miten te yleensä havaitsette/selvitätte kuinka ympäristöystävällisestä elintarvikkeesta on kysymys? *(TARKKAA TOTEAVATKO YMPÄRISTÖMERKINNÄT)*

- Käsisydämellä, kuinka paljon te aidosti kiinnitätte huomiota elintarvikkeiden aiheuttamaan ympäristökuormaan ostotilanteessa? Kuinka paljon todella paneudutte asiaan/ kuinka paljon menee ns. ’mutun’ varassa?

(TÄMÄN OSION TAVOITTEENA ON PIIRTÄÄ KUVAA SIITÄ, MITEN VASTAAJAT YMMÄRTÄVÄT OMAN KULUTTAMISENSA YMPÄRISTÖVAIKUTUKSET, MITEN SUHTAUTUMINEN AIHESEEN ON MUUTTUNUT VUOSIEN SAATOSSA JA MIKSI MUUTOSTA ON TAPAHTUNUT. EDELLEEN HAETAAN VASTAUSTA SIIHEN, MILLÄ LOGIIGALLA YMPÄRISTÖYSTÄVÄLLISYYS TOIMII RUOAN VALINTAPERUSTEENA & LIITTYYKÖ SIIHEN MUITA ESIM. RUOAN LAATUA VIESTIVIÄ NÄKÖKULMIA, JOILLA ON VAIKUTUSTA OSTOHALUKKUUTEEN.)

4. Hiilijalanjäljestä (60min)

- Jaan teille seuraavaksi tyhjät paperit – kirjoittakaa paperille mitä te ymmärrätte sanalla **hiilijalanjälki** *(ANNA VASTAAJIEN LAATIA OMA KUVAUS KÄSITTEESTÄ)*
    - Kertokaahan minulle omin sanoin **lyhyesti** mistä puhutaan silloin, kun puhutaan hiilijalanjäljestä?
- Kuinka paljon olette pohtineet oman **syömisenne** aiheuttamaa hiilijalanjälkeä ennen tätä tilaisuutta? → Kuinka helppoa tai vaikeaa asian hahmottaminen teille on? → Onko joku teistä tehnyt jotain käytännön ratkaisuja asiaan vaikuttaakseen tai ainakin harkinnut asiaa vakavasti? → Mitä?

- Kuinka haastavalta/ helpolta tuntuisi ajatus että alkaisi valita elintarvikkeita myös tähän asiaan enemmän huomiota kiinnittäen? → Miksi?
- Luen teille nyt hiilijalanjälki -käsitteen 'virallisen' määritelmän. Näin voimme var*mistua siitä, että puhumme kaikki samasta asiasta.* *(LUE ASIAKKAAN TOIMITTAMA LYHYT KONSEPTIN KUVAUS)*

"Tuotteen hiilijalanjäljellä mitataan tuotteen aiheuttamaa ilmastonmuutosvaikutusta, jossa on huomioitu tuotteen kaikissa elinkaaren vaiheissa syntyneet kasvihuonepäästöt."

- Jos vertaatte aiempaa käsitystänne, ja nyt kuulemaanne kuvausta, kuinka oikeilla jäljillä olette olleet asiassa?
- Kuinka tärkeästä/ oikeasti teitä kiinnostavasta asiasta tässä oikeastaan on kysymys?
- Koetteko itse, että teillä on ollut/on/voisi jatkossa olla hiilijalanjälkeen liittyvää tiedontarvetta?
- Miettikääpä jälleen elintarvikkeiden eri tuoteryhmiä – siis vihanneksia, lihatuotteita, maitotuotteita, leipomotuotteita jne., **korostuuko hiilijalanjäljen merkitys eri tavoin eri tuoteryhmissä?** → Mistä tuoteryhmistä se olisi erityisen mielenkiintoista tietää? *(PUMPPAA ONKO VAIKUTUS KOROSTUNUT JOISSAKIN TUOTERYHMISSÄ MUITA ENEMMÄN)*

MERKINNÄT JA MUU VIESTINTÄ:

- Mistä elintarvikkeiden aiheuttaman hiilijalanjäljen voi todeta?

(KATSOTAAN OTTAVATKO SPONTAANISTI ESILLE MERKINNÄT – VOIDAAN KESKUSTELLA MYÖS MUISTA VIESTIMISKANAVISTA (UUTISET, NETTI YM.), JOS KESKUSTELIJAT KOKEVAT SEN KESKEISENÄ)

- Millaisia mielikuvia tuotteiden hiilijalanjälkeä ilmaiseviin **merkintöihin** liittyy? Tuleeko mieleenne elintarvikepakkauksia, joissa on tuotteen hiilijalanjälkeä kuvaava merkintä?
- Katsotaanpa muutamia elintarvikkeiden hiilijalanjälkeä kuvaavia merkintöjä :

- Mikä on ensireaktionne? Mitä nämä merkit (tämä merkki) teille oikeastaan kertovat (kertoo)? → Kuinka selkeiltä/ epäselviltä ne näyttävät/ miksi?

KUN KAIKKI MERKINNÄT ON TUOTU ESILLE

- Tuovatko tällaiset merkinnät tuotteelle **lisäarvoa**? → Miksi?/ Miksi ei?
- Mitä positiivista ja mitä negatiivista tällaisiin merkintöihin liittyy? *(SELVITÄ MILLAISET ASIAT HEIKENTÄVÄT MERKIN VAIKUTUSTA KULUTTAJAAN)*
- Kannattaako elintarvikevalmistajien panostaa hiilijalanjälkien merkitsemiseen tuotteisiinsa? → Miksi/ Miksi ei? → Onko kyseessä asia, joka vaikuttaa oikeasti **ostamispäätökseenne**? Minkä ruokaryhmien kohdalla näin voisi olla erityisesti? Entä jos pienemmän hiilijalanjäljen tuote olisi hieman kalliimpi?
- Uskotteko, että hiilimerkinnällä on vaikutusta muiden kuluttajien ostopäätöksiin?

- *Lopuksi, vain jos on aikaa:*
    - *Teettekö mieluummin vertailua yhden tuoteryhmän sisällä esim. leipä toista leipää tai leipien keskiarvoa vastaan, vai olisiko hyödyllisempää, jos eri tuoteryhmien tuotteita voisi vertailla keskenään hiilijalanjäljen suhteen? → Mikä olisi teille hyödyllisin tapa kertoa asiasta? (PUMPPAA TUOTEKOHTAINEN LUKUARVO VAI VERTAILU KESKIARVOON).*
    - *Millainen merkin pitää olla, että se olisi luotettava? → Millainen vaikutus merkin taustavoimilla (yritykset & viranomaiset) on sen uskottavuuteen/motivoivuuteen?*
    - *Missä elintarvikkeissa teidän käsityksenne mukaan on iso hiilijalanjälki ja missä pienempi?*

- *Mistä haluaisitte lisää tietoa elintarvikkeiden hiilijalanjäljistä?*

Lopputerveiset ja kiitokset!

APPENDIX 3 Initial code list

Code-Filter: All

HU: DI-tyo_9.11.2012
File: [Z:\Diplomityön varmuuskopiot\Diplomityö_9.11.2012\DI-tyo_9.11.2012.hpr7]
Edited by: Super
Date/Time: 2012-11-09 17:46:23

AITOUS
- **Aitous_Ostopäätösperuste**
- **Aitous_Ympäristöliitäntä**

ALKUPERÄ
- **Alkuperä_Korostuu hevissä**
- **Alkuperä_Korostuu leipomotuotteissa**
- **Alkuperä_Korostuu lihassa**
- **Alkuperä_Ostopäätösperuste**
- **Alkuperä_Ympäristöliitäntä**

ASUMINEN
- **Asuminen_Ympäristöliitäntä**

EETTISYYS
- **Eettisyys_Eettinen tuote on kallis**
- **Eettisyys_Eettisestä tuotteesta on valmis maksamaan enemmän**
- **Eettisyys_Eettisyys on arvo**
- **Eettisyys_Ei ole ostotilanteessa mielessä**
- **Eettisyys_Este ostopäätökselle_Hinta**
- **Eettisyys_Este ostopäätökselle_Saatavuus**
- **Eettisyys_Joidenkin valmistajien uskotaan olevan eettisiä**
- **Eettisyys_Korostuu eläinkunnan tuotteissa**
- **Eettisyys_Korvausajattelua**
- **Eettisyys_Luottamus**
- **Eettisyys_Ostopäätösperuste**
- **Eettisyys_Vähemmän tärkeä hevissä koska eläimet eivät kärsi**

ENERGIANKULUTUS
- **Energiankulutus_Ympäristöliitäntä**
- **Environmentally conscious consumer**

FIILIS
- **Fiilis_Ostopäätösperuste**

HIILIJALANJÄLKI
- **Hiilijalanjälki_NEG_Ei kiinnosta_Koska asuu yksin**
- **Hiilijalanjälki_NEG_Ei kiinnosta_Koska ilmastonmuutoksesta ei ole varmuutta**
- **Hiilijalanjälki_NEG_Ei kiinnosta_Koska yhden ihmisellä ei merkitystä**
- **Hiilijalanjälki_NEG_Ei lisää kriteereitä**
- **Hiilijalanjälki_NEG_Ei ole pohdittu aikaisemmin**
- **Hiilijalanjälki_NEG_Lisää huonoa omaatuntoa**
- **Hiilijalanjälki_NEG_Ruuassa ei mielenkiintoinen koska pakko syödä kuitenkin**
- **Hiilijalanjälki_O_Aiheuttajat_Eläintuotteet**
- **Hiilijalanjälki_O_Aiheuttajat_Kuljetus**
- **Hiilijalanjälki_O_Aiheuttajat_Lentäminen**
- **Hiilijalanjälki_O_Aiheuttajat_Pakkaukset/Roskat/Saaste**
- **Hiilijalanjälki_O_Aiheuttajat_Prosessointi**
- **Hiilijalanjälki_O_Aiheuttajat_Ulkomaalaisuus**
- **Hiilijalanjälki_O_Arviointi on vaikeaa**

Hiilijalanjälki_O_Kaukaa tuotu vs. Talvella kasvihuoneessa kasvatettu
Hiilijalanjälki_O_Käyttäminen pitää olla helppoa
Hiilijalanjälki_O_Määritelmä_Ilmastomuutoksen aiheuttaja
Hiilijalanjälki_O_Määritelmä_On energiankulutus
Hiilijalanjälki_O_Määritelmä_On kaikki jäljelle jäävä saaste/päästöt
Hiilijalanjälki_O_Määritelmä_On kaikki kuormitus ympäristölle
Hiilijalanjälki_O_Määritelmä_On kaikki päästöt
Hiilijalanjälki_O_Määritelmä_On luonnonvarojen kulutus
Hiilijalanjälki_O_On kriteerinä liian suppea
Hiilijalanjälki_O_On vain yksi kriteeri
Hiilijalanjälki_O_Ostopäätösperuste
Hiilijalanjälki_O_Pakkausmerkintä olisi hyvä viestintäkanava
Hiilijalanjälki_O_Pieni_Luomutuotteilla
Hiilijalanjälki_O_Suhteuttaminen
Hiilijalanjälki_O_Tiedonlähteitä tähän mennessä
Hiilijalanjälki_O_Tiedot hiilijalanjäljestä ovat puutteelliset
Hiilijalanjälki_O_Tiedotuskanava_Dokumentit
Hiilijalanjälki_O_Tiedotuskanava_Lehdet
Hiilijalanjälki_O_Tiedotuskanava_TV
Hiilijalanjälki_O_Ymmärtäminen on vaikeaa
Hiilijalanjälki_POS_On kiinnostava asia
Hiilijalanjälki_POS_On kiinnostava asia_Erityisesti hevissä
Hiilijalanjälki_POS_On kiinnostava asia_Erityisesti lihatuotteissa
Hiilijalanjälki_POS_On kiinnostava asia_Erityisesti maitotuotteissa
Hiilijalanjälki_POS_On pohdittu aikaisemmin
Hiilijalanjälki_POS_On tärkeä asia
Hiilijalanjälki_POS_On yritetty pienentää

HIILIJALANJÄLKIMERKIT

Hiilijalanjälkimerkit_HL_Huono
Hiilijalanjälkimerkit_HL_Hyvä koska kertoo että valmistaja on miettinyt asiaa
Hiilijalanjälkimerkit_PH_Huono
Hiilijalanjälkimerkit_PH_Huono koska vaikea ymmärtää
Hiilijalanjälkimerkit_PH_Hyvä
Hiilijalanjälkimerkit_RA_Huono
Hiilijalanjälkimerkit_RA_Huono koska 10% ei ole suuri vähennys
Hiilijalanjälkimerkit_RA_Huono koska ei ole uskottava
Hiilijalanjälkimerkit_RA_Huono koska epämääräinen
Hiilijalanjälkimerkit_RA_Huono koska viherpesun fiilis
Hiilijalanjälkimerkit_RA_Hyvä koska kertoo että kehittyy
Hiilijalanjälkimerkit_SK ja TS_Hyvät yhdessä
Hiilijalanjälkimerkit_SK ja VN_Kertoisivat kokonaisuuden ja silti voisi vertailla tuoteryhmän sisällä
Hiilijalanjälkimerkit_SK_Huono koska ei välttämättä mahdollista tuoteryhmäkohtaista vertailua
Hiilijalanjälkimerkit_SK_Huono koska ymmärrettävä
Hiilijalanjälkimerkit_SK_Hyvä
Hiilijalanjälkimerkit_SK_Hyvä koska helppo ymmärtää
Hiilijalanjälkimerkit_SK_Hyvä koska suhteutetaan
Hiilijalanjälkimerkit_SK_Hyvä koska uskottava
Hiilijalanjälkimerkit_SK_Hyvä koska vertailllaan
Hiilijalanjälkimerkit_SK_Hyvä koska värikoodi
Hiilijalanjälkimerkit_SK_Vaikuttaisi ostopäätökseen
Hiilijalanjälkimerkit_TS_Huono koska ei suhteuteta mihinkään
Hiilijalanjälkimerkit_TS_Huono koska ei vertailla mihinkään
Hiilijalanjälkimerkit_TS_Hyvä
Hiilijalanjälkimerkit_TS_Hyvä jos kaikissa niin voi suhteuttaa kokonaisuuteen

Hiilijalanjälkimerkit_TS_Hyvä koska mahdollistaa eri tuoteryhmien välisen vertailun
Hiilijalanjälkimerkit_TS_Hyvä koska selkeä
Hiilijalanjälkimerkit_TS_Liian vaikea koska pitää vertailla muihin tuotteisiin
Hiilijalanjälkimerkit_TS_Riittävä tieto jos oppii suhteuttamaan
Hiilijalanjälkimerkit_VN_Huono koska ei voi vertailla eri tuoteryhmien välillä
Hiilijalanjälkimerkit_VN_Hyvä koska helppo ymmärtää
Hiilijalanjälkimerkit_VN_Olisi hyvä
Hiilijalanjälkimerkit_VN_On helppo koska ei tarvitse vertailla
Hiilijalanjälkimerkit_Yleisesti_Eihän siitä haittaakaan ole
Hiilijalanjälkimerkit_Yleisesti_Hiilimerkitystä tuotteesta on valmis maksamaan enemmän
Hiilijalanjälkimerkit_Yleisesti_Jos puuttuu niin on jotain salattavaa
Hiilijalanjälkimerkit_Yleisesti_Lisäisi maksuhalukkuutta
Hiilijalanjälkimerkit_Yleisesti_Lisäisivät arvostusta valmistajaa kohtaan
Hiilijalanjälkimerkit_Yleisesti_Lisäisivät kiinnostusta!
Hiilijalanjälkimerkit_Yleisesti_Luotettavuus
Hiilijalanjälkimerkit_Yleisesti_Merkit lisäävät arvostusta
Hiilijalanjälkimerkit_Yleisesti_Muistaa nähneensä pakkausmerkinnän
Hiilijalanjälkimerkit_Yleisesti_Mustat kuvat ovat ahdistavia
Hiilijalanjälkimerkit_Yleisesti_On hyvä juttu
Hiilijalanjälkimerkit_Yleisesti_Pitäisi olla yleinen käytöntö
Hiilijalanjälkimerkit_Yleisesti_Pitää olla helppo tulkita
Hiilijalanjälkimerkit_Yleisesti_Pitää olla kaikissa tuotteissa että voi vertailla
Hiilijalanjälkimerkit_Yleisesti_Pitää olla luotettava
Hiilijalanjälkimerkit_Yleisesti_Suhteuttaminen
Hiilijalanjälkimerkit_Yleisesti_Uppoaisi nuoriin
Hiilijalanjälkimerkit_Yleisesti_Vaikuttaisi ostopäätökseen
Hiilijalanjälkimerkit_Yleisesti_Vain vähän pienempi hiilijalanjälki ei riitä motivaattoriksi
Hiiljalanjälki_AI_Pieni_Lähituotteilla
Hiiljalanjälki_Pienentäminen_On helppoa

HINTA

Hinta_Korostuu juustoissa
Hinta_Korostuu lihatuotteissa
Hinta_Luomu on kallista
Hinta_Olosuhde_Korostuu luomulihassa
Hinta_On valmis maksamaan enemmän hyvästä leivästä
Hinta_Ostopäätösperuste
Hinta_Suomalainen tuote on kallis
Hinta_Suomalaisuudesta voi maksaa enemmän_Korostuu leipomotuotteissa
Hinta_Tarjoukset_Ostopäätösperuste

IRTOMYYNTI

Irtomyynti_On parempaa
Irtomyynti_On tuoreempaa
Irtomyynti_On turvallisempaa
Irtomyynti_On ympäristöystävällistä

JÄLJITETTÄVYYS

Jäljitettävyys_Ostopäätösperuste

JÄTTEET/SAASTEET

Jätteet/Saasteet_Ympäristöliitäntä

KAUDENMUKAISUUS

Kaudenmukaisuus_Talvella ei voi syödä mitään
Kaudenmukaisuus_Ympäristöliitäntä
Kauppa_Vaikuttaa voimakkaasti mielikuviin tuotteista

KIERRÄTYS

Kierrätys_Ympäristöliitäntä

KULJETUS

- **Kuljetus_Kasvattaa hiilijalanjälkeä**
- **Kuljetus_Ympäristöliitäntä**

KULUTTAMINEN

- **Kuluttaminen_Ympäristöliitäntä**

LAATU

- **Laatu_Laadukas tuote on aitoa raaka-ainetta**
- **Laatu_Laadukkaasta tuotteesta on valmis maksamaan enemmän**
- **Laatu_Ostopäätösperuste**
- **Laatu_Suomalainen tuote on laadukas**

LAPSI

- **Lapsi_Ei osta eineksiä**
- **Lapsi_Ostaa luomua lapselle koska puhdasta/terveellistä**
- **Lapsi_Ostopäätösperuste**

LIIKENNE/LIIKKUMINEN/MATKUSTUS

- **Liikenne/Liikkuminen/Matkustus_Ympäristöliitäntä**

LISÄAINEETTOMUUS

- **Lisäaineettomuus_Este ostopäätökselle_Saatavuus**
- **Lisäaineettomuus_Lapselle lisäaineetonta**
- **Lisäaineettomuus_Ostopäätösperuste**
- **Lisäaineettomuus_Ostopäätösperuste_Aitouden kautta**
- **Lisäaineettomuus_Ympäristöliitäntä**

LUOMU

- **Luomu_Este ostopäätökselle_Hinta**
- **Luomu_Este ostopäätökselle_Saatavuus**
- **Luomu_Korostuu eläinkunnan tuotteissa**
- **Luomu_Korostuu hevissä**
- **Luomu_Korostuu maitotuotteissa**
- **Luomu_Luomu on arvo**
- **Luomu_Luomueläintuote on eettinen**
- **Luomu_Luomutuote ei ole ympäristöystävällinen koska tehotonta**
- **Luomu_Luomutuote on kallis**
- **Luomu_Luomutuote on laadukas**
- **Luomu_Luomutuote on maukkaampi**
- **Luomu_Luomutuote on parempi kaikille**
- **Luomu_Luomutuote on puhdas**
- **Luomu_Luomutuote on terveellinen**
- **Luomu_Luomutuote on ympäristöystävällinen**
- **Luomu_Luomutuote tulee ostettua vaikka se maistuisi huonommalle**
- **Luomu_Luomutuotteesta on valmis maksamaan enemmän**
- **Luomu_Ostopäätösperuste**

LUOTTAMUS

- **Luottamus_Kuluttaja tekee oman päätelmänsä ympäristötiedon luotettavuudesta**
- **Luottamus_Suomalaisiin tuotteisiin voi luottaa**
- **Luottamus_Tiettyjen toimintaa pidetään luotettavana**
- **Luottamus_Yleisesti**

LÄHIRUOKA

- **Lähiruoka_Alkuperän tietäminen on kiva juttu**
- **Lähiruoka_Korostuu maalla/mökillä**
- **Lähiruoka_Lähiruoka kuormittaa ympäristöä vähemmän**
- **Lähiruoka_Lähiruoka on luotettavaa**
- **Lähiruoka_Maistuu paremmalta**
- **Lähiruoka_On tuoreempaa**
- **Lähiruoka_Ostopäätösperuste**

MAKU

- **Maku_Hyvänmakuisesta tuotteesta on valmis maksamaan enemmän**

Maku_Korostuu leipätuotteissa
Maku_Menee eettisyyden edelle
Maku_Ostopäätösperuste
Maku_Ostopäätösperuste_Ei tarvitse heittää pois kun kaikki syödään

PAKKAUS

Pakkaus_Koko pitää olla sopiva_Korostuu helposti pilaantuvissa_Liha ja Maito
Pakkaus_Oikea pakkauskoko vähentää ympäristökuormitusta pienemmän ruokahävikin kautta
Pakkaus_Ostopäätösperuste
Pakkaus_Ostopäätösperuste_Pitää olla oikean kokoinen
Pakkaus_Pakatun tuotteen laatua on vaikea arvioida
Pakkaus_Pakkaamattomuus_Korostuu leipomotuotteissa
Pakkaus_Pakkaamattomuus_Korostuu lihatuotteissa
Pakkaus_Ympäristöliitäntä
Pakkaus_Ympäristöliitäntä pakkauksen kierrätettävyyden kautta

PAKKAUSMERKINNÄT

Pakkausmerkinnät_Ostopäätösperuste
Pakkausmerkinnät_Ruohonjuuressa pakkausmerkintöjä ei katsella
Pakkausmerkinnät_Tutussa kaupassa pakkausmerkintöjä ei katsella

PROSESSOINTI

Prosessointi_Kasvattaa hiilijalanjälkeä
Prosessointi_Prosessoimattomuus_Ostopäätösperuste
Prosessointi_Prosessoitu tuote on epäterveellinen
Prosessointi_Prosessoitu tuote on ympäristöä kuormittava
Prosessointi_Ympäristöliitäntä

PUHTAUS

Puhtaus_Ostopäätösperuste
Puhtaus_Puhdas tuote on laadukas
Puhtaus_Puhdas tuote on maukas
Puhtaus_Suomalainen tuote on puhdas
Puhtaus_Suomalainen tuote on puhdas_Korostuu kasviksissa
Puhtaus_Turvallisesta tuotteesta voi maksaa enemmän
Pyykinpesu_Ympärisöliitäntä

PÄIVÄMÄÄRÄ

Päivämäärä_Korostuu leivässä
Päivämäärä_Korostuu lihatuotteissa
Päivämäärä_Korostuu maitotuotteissa
Päivämäärä_Korostuu tietyissä kaupoissa
Päivämäärä_Lyhyt ei haittaa jos käyttää heti
Päivämäärä_Ostopäätösperuste
Päivämäärä_Ostopäätösperuste_Säilyvyyden kautta

RAVINTOSISÄLTÖ

Ravintosisältö_Korostuu leivissä
Ravintosisältö_Korostuu lihoissa
Ravintosisältö_Korostuu maitotuotteissa
Ravintosisältö_Ostopäätösperuste
Ravintosisältö_Ostopäätösperuste_Korostuu maitotuotteissa

RUOKA

Ruoka_On polttoainetta/Ruoka on ruokaa
Ruoka_Ruoka on arvo
Ruoka_Ympäristöliitäntä
Ruoka_Ympäristöliitäntä on heikko
Ruoka_Ympäristöliitäntä_Jätteiden kautta
Ruoka_Ympäristöliitäntä_Kasviksilla on pienet ympäristövaikutukset
Ruoka_Ympäristöliitäntä_Kuljetuksien kautta
Ruoka_Ympäristöliitäntä_Lihalla on isot ympäristövaikutukset

Ruoka_Ympäristöliitäntä_Maidolla on isot ympäristövaikutukset
Ruoka_Ympäristöliitäntä_Ruoka ei kokonaiskuorman kannalta tärkeä
RUOKAHÄVIKKI
Ruokahävikki_Ympäristöliitäntä
RUTIINI
Rutiini_Luomun vihreät hintalaput helpottavat
Rutiini_Ostopäätösperuste
Rutiini_Ostopäätösperuste_Korostuu maitotuotteissa
SUOMALAISUUS
Suomalaisuus_Haluaa tukea suomalaista työtä
Suomalaisuus_Korostuu hevissä
Suomalaisuus_Korostuu leivässä
Suomalaisuus_Korostuu lihoissa
Suomalaisuus_Ostopäätösperuste
Suomalaisuus_Ristiriitainen suhtautuminen
Suomalaisuus_Suomalainen tuote ei ole ympäristöystävällinen koska tarvitaan paljon energiaa kasvihuoneisiin
Suomalaisuus_Suomalainen tuote on eettinen
Suomalaisuus_Suomalainen tuote on kalliimpi
Suomalaisuus_Suomalainen tuote on laadukas
Suomalaisuus_Suomalainen tuote on luotettava
Suomalaisuus_Suomalainen tuote on maukkaampi
Suomalaisuus_Suomalainen tuote on puhdas
Suomalaisuus_Suomalainen tuote on ympäristöystävällinen
Suomalaisuus_Suomalaisen tuotteen hiilijalanjälki on ulkolaista pienempi
Suomalaisuus_Suomalaisesta tuotteesta on valmis maksamaan enemmän
Suomalaisuus_Suomalaisuus on arvo
SÄHKÖNKULUTUS
Sähkönkulutus_Ympäristöliitäntä
SÄILYVYYS
Säilyvyys_Ostopäätösperuste
TARJOUKSET
Tarjoukset_Ostopäätösperuste
TERVEELLISYYS
Terveellisyys_Ostopäätösperuste
Terveellisyys_Terveellinen ruoka on kasvisruokaa
Terveellisyys_Ympäristön voi uhrata terveyden vuoksi
TUHLAUS/JÄRKEVYYS
Tuhlaus_Tuhlaus on ympäristöongelma
TUOREUS
Tuoreus_Korostuu hevissä
Tuoreus_Korostuu leivässä
Tuoreus_Korostuu lihassa
Tuoreus_Ostopäätösperuste
Tuoreus_Suomalainen tuote on tuore
TUOTTAJA/VALMISTAJA/SUOSIKKI/MERKKI
Tuottaja/Valmistja/Suosikki/Merkki_Ostopäätösperuste
TURVALLISUUS
Turvallisuus_Ostopäätösperuste
ULKONÄKÖ
Ulkonäkö_Korostuu pullissa
Ulkonäkö_Ostopäätösperuste
YMPÄRISTÖ
Ympäristö_NEG_Ahdistys ympäristön tilasta on johtanut otteen löysäämiseen
Ympäristö_NEG_Demotivaatiotekijä kuorman pienentämiseen_Ei halua omia lapsia

Ympäristö_NEG_Demotivaatiotekijä kuorman pienentämiseen_On nähnyt mitä muualla tapahtuu
Ympäristö_NEG_Demotivaatiotekijä kuorman pienentämiseen_Ympäristö on vain yksi tekjiä
Ympäristö_NEG_Ei halua olla ympäristöllisesti valveutunut
Ympäristö_NEG_Ihmisellä oikeus saastuttaa
Ympäristö_NEG_Mikä on hyvä ja mikä huono valinta?
Ympäristö_NEG_Omaa kuormaa ei tule mietittyä
Ympäristö_NEG_Oman kuorman arviointi ei kiinnosta
Ympäristö_NEG_Oman kuorman pienentäminen laskee elämänlaatua
Ympäristö_NEG_Oman kuorman pienentäminen on luopumista
Ympäristö_NEG_Suhtautuminen muuttunut kyynisemmäksi
Ympäristö_NEG_Yksi ihminen ei voi vaikuttaa kokonaisuuteen

Ympäristö_NEU_Este ostopäätökselle_Saatavuus
Ympäristö_NEU_Kasvihuonetuote ei ole ympäristöystävällinen
Ympäristö_NEU_Keinoja oman kuorman pienentämiseen ei tunneta
Ympäristö_NEU_Keinoja oman kuorman pienentämiseksi
Ympäristö_NEU_Keinoja on oman kuorman vähentämiseen
Ympäristö_NEU_Korvausajattelua
Ympäristö_NEU_Kuormaa ei mietitä ostotilanteessa
Ympäristö_NEU_Oman kuorman arviointi on vaikeaa
Ympäristö_NEU_Oman kuorman pienentäminen on helppoa
Ympäristö_NEU_Oman kuorman pienentäminen pitää olla helppoa
Ympäristö_NEU_Omavaraisuus on ympäristöystävällistä
Ympäristö_NEU_Ostopäätösperuste
Ympäristö_NEU_Ostopäätösperuste_Kun ostaa jotain uutta
Ympäristö_NEU_Ostopäätösperuste_Ostopäätös tehdään ennen kauppaa
Ympäristö_NEU_Ostopäätösperuste_Välttää riisiä koska se vie paljon vettä
Ympäristö_NEU_Ruohonjuuren tuotteet ovat ympäristöystävällisiä
Ympäristö_NEU_Sosiaaliset suhteet vaikuttaneet suhtautumiseen
Ympäristö_NEU_Tieto lisää tuskaa
Ympäristö_NEU_Tieto vaikuttaa käyttäytymiseen
Ympäristö_NEU_Tietoa on oman kuorman vähentämiseen
Ympäristö_NEU_Tietoa ympäristöystävällisyydestä ei ole ostohetkellä
Ympäristö_NEU_Tietoa ympäristöystävällisyydestä on saatavilla yleisesti
Ympäristö_NEU_Tietoisuus kasvanut mediaa seuraamalla

Ympäristö_POS_Arvojen toteuttaminen on periaatteen asia
Ympäristö_POS_Huono omatunto omasta kuormasta
Ympäristö_POS_Käyttäytyminen muuttuu kun on enemmän rahaa käytettävänä
Ympäristö_POS_Käyttäytyminen muuttuu ymmärryksen lisääntyessä
Ympäristö_POS_Oma kuorma tiedostetaan
Ympäristö_POS_Omaa kuormaa pienennetään tai halutaan pienentää
Ympäristö_POS_Oman kuorman pienentämisessä voi olla myös hyviä puolia
Ympäristö_POS_Optimismia maailman pelastumisesta
Ympäristö_POS_Suhtautuminen muuttunut aikuistuessa
Ympäristö_POS_Terveyden voi uhrata ympäristön vuoksi
Ympäristö_POS_Tiedontarve kuorman pienentämiseksi on
Ympäristö_POS_Valmius muuttaa käyttäytymistään_Pikkuhiljaa pieniä juttuja
Ympäristö_POS_Välillä tulee ekopuuskia
Ympäristö_POS_Yksi ihminen voi vaikuttaa kokonaisuuteen

Ympäristö_Ympäristöystävällinen tuote on eettinen
Ympäristö_Ympäristöystävällinen tuote on kalliimpi
Ympäristö_Ympäristöystävällinen tuote on kasvispohjainen

Ympäristö_Ympäristöystävällinen tuote on kasvispohjainen_Ja siksi huonon makuinen
Ympäristö_Ympäristöystävällinen tuote on kuluttanut vähän energiaa
Ympäristö_Ympäristöystävällinen tuote on laadukas
Ympäristö_Ympäristöystävällinen tuote on mahdollisimman vähän prosessoitu
Ympäristö_Ympäristöystävällinen tuote on maukas
Ympäristö_Ympäristöystävällinen tuote on metsän anti
Ympäristö_Ympäristöystävällinen tuote on puhdas
Ympäristö_Ympäristöystävällinen tuote on terveellinen
Ympäristö_Ympäristöystävällinen tuote on tuoretuote
Ympäristö_Ympäristöystävällinen tuote on turvallinen
Ympäristö_Ympäristöystävällisyys määritetään mutuntumalla
Ympäristö_Yritysten ympäristöväitteisiin ei voi luottaa